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The Accounting Entity Concept, Accounting Standards, and Inflation Accounting*

T. A. Lee

Few accountants would argue with the notion that the accounting entity concept is of crucial importance to financial reporting theory and practice. Indeed, its well-seen nature may provide some explanation of the lack of emphasis given to it in the accountancy literature. A limited number of writers have commented on it in detail, but there appears to have been little conscious effort to relate it to the theoretical and practical problems of the financial reporting function—particularly those related to the measurement and disclosure of entity income and financial position.

The existing literature on the concept is not only small but also complex and confused. Its meaning is relatively obscure, and it is consequently difficult to relate it to such practical matters as financial accounting standards and inflation accounting proposals. The aim of this paper, therefore, is to clarify the concept's meaning and then to relate it to recent United Kingdom financial reporting developments.[1]

Interpreting the accounting entity concept

Meyer has defined the accounting entity concept in the following way:[2]

> The entity concept in accounting relates to the identity of the matter or activity for which an accounting is to occur and the relationship assumed to exist between the entity and external parties.

Although not specifically referring to financial reporting, this definition obviously implies a reporting activity between the entity and its external parties. As such, it is a concept of two parts—the first dealing with *what* is to be accounted and reported, and the other being related to those persons *for whom* financial reports are prepared. The importance of this distinction cannot be overemphasised for, when a review of the relevant literature is made, it is found that the concept is discussed and defined normally in terms only of the relationships which are assumed to exist between the entity and the external parties who are deemed to be potential users of its published financial reports. Rarely is the question of what is to be reported discussed in any detail, beyond explanations of the consequences of particular interpretations of 'entity—external party' relationships on accounting disclosures in financial statements.

Hendriksen is typical of this approach. He describes the accounting entity concept in terms of 'ownership equities'.[3] Explaining these mainly in relation to different ways of disclosing income statement and balance sheet data, he lists six separate entity theories, each of which is 'user' orientated—that is, proprietary (the proprietors of the entity are deemed to own its assets and liabilities); entity (the entity is deemed to be separate from its ownership); residual equity (a form of entity theory which concentrates on the most junior ownership grouping in the entity); enterprise (the entity is deemed to be a social unit acting for several interested groups in the community); fund (the entity being regarded as a user of funds of assets); and commander (the emphasis being on managerial stewardship of entity resources).

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* I am grateful to my colleagues in the Department of Accounting and Business Method, University of Edinburgh, and to an anonymous referee, for their exceedingly helpful suggestions which have improved this paper.

[1] See, for example, E. Stamp, 'ED 18 and Current Cost Accounting: A Review Article', *Accounting and Business Research*, Spring 1977, pp. 92–3.

[2] P. E. Meyer, 'The Accounting Entity', *Abacus*, December 1973, p. 116.

[3] E. S. Hendriksen, *Accounting Theory*, Revised Edition, Irwin, 1970, pp. 495–520.

Each of these approaches to the accounting entity concept can be regarded as separately identifiable. Each results in particular accounting treatments of such matters as interest, taxation and dividends. Consequently, each places a different interpretation on the disclosure of entity income and balance sheet classifications. Nevertheless, they contain common features to such an extent that they could be divided more simply into two groupings—that is, proprietary (those emphasising various proprietary interests in the entity, and thus arguably including the proprietary, residual equity and commander theories mentioned above); and enterprise (those emphasising the activities of the entity as a business enterprise, and including the remaining theories of Hendrikson—entity, enterprise and fund). In other words, the various theories of the accounting entity concept appear to be no more than sub-categories of the two main classifications.

Meyer seems to have recognized this latter point and, despite his explanation of eight separate viewpoints, he placed them into three major groupings.[4] His work contains detailed and comprehensive *descriptions* of the entity concept and, for this reason, is useful to outline briefly at this stage.[5]

His first grouping is described as the *proprietary* approach, and mainly involves the relationship between the entity and its various proprietary interests. This is interpreted in three separate ways—that is, the traditional proprietary theory which is oriented fully to ownership (income is the periodic change in ownership net worth, excluding capital items; and interest and taxation are treated as expenses); the residual equity theory emphasising the most junior class of ownership (distributions to senior classes are expenses in determining income); and the equity theory with an emphasis on a broad perception of ownership including lenders and creditors (interest and taxation are treated as distributions in this case).

Meyer's second grouping is entitled the *pure entity* approach, and examines the relationship between the entity and its various vested interests, but without defining them and without regarding them as proprietary. Two separate interpretations of this classification are given (each, however, containing similar features)—that is, self-equity (the entity being regarded as an institution in its own right, and the retained income measure being determined as its income); and the social viewpoint (where the entity is said to be satisfying various demands of it by society, and its income is also equated with the retained income measurement).

Meyer describes his final grouping as the *functional* approach. This concentrates on the financial reporting function rather than the legal or human relationships of his other groupings. Three versions of this viewpoint are discussed by him—that is, enterprise (the entity being a separate enterprise with various vested interests in it, each enjoying its share of an income measure defined as before deduction of interest, taxation and dividends); funds (where the entity is regarded as a fund of assets, and its statements are neutral in the sense that they have no particular vested interest group in mind); and commander (emphasising management command over entity resources and ownership income; the latter being defined as after deduction of interest and taxation but before deduction of dividends).

Much of the above brief analysis of the accounting entity concept appears to overcomplicate the topic. The problems of financial reporting are complicated enough without further adding to their complexity by perpetuating subcategories of ideas and approaches of only limited usefulness in the solution of major issues. The accounting entity concept used to be regarded in a fairly simple way, as the writings of Husband[6] and Sprouse[7] will testify. This paper advocates a return to a simpler approach in order to reveal the meaningful contribution which the accounting entity concept has to make to the resolution of accounting problems in practice.

To do this, it is recommended that, as with Hendriksen's analysis, the approaches to the concept outlined by Meyer be reclassified into two main groupings—proprietary (that which examines the specific relationships between the entity and its various defined proprietary interests) and enterprise (the entity being regarded as a separate enterprise with various vested interests in it, but without defining the latter and without regarding them as proprietary). This can be done by placing the commander theory in Meyer's 'proprietary' grouping, and the defined enterprise and fund approaches in his 'pure entity' category and renaming it the 'enterprise' grouping.

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[4] Meyer, *op. cit*, pp. 116–26.

[5] Meyer's paper, together with that of R. S. Gynther ('Accounting Concepts and Behavioural Hypotheses', *Accounting Review*, April 1967, pp. 274–90), have provided much of the impetus for the remainder of this analysis of the entity concept in relation to current practice.

[6] G. R. Husband, 'The Entity Concept in Accounting', *Accounting Review*, October 1954, pp. 552–63.

[7] R. T. Sprouse, 'The Significance of the Concept of the Corporation in Accounting Analyses', *Accounting Review*, July 1957, pp. 369–78.

By taking this simple approach, accounting and reporting of such matters as income and financial position could be more easily defined. For example, measures of income and financial position in a proprietary system would reflect the precise definition given to the proprietary interests to which the financial statements are directed. Equally, if the enterprise approach is adopted, its neutrality vis-à-vis vested interests dictates that income and financial position measures should reflect all such interests without bias to any one such group. Proprietary financial reports would therefore be specific user-oriented; enterprise reports would be genuinely general-purpose.

The accounting entity concept and the professional bodies

Financial reporting is a practical function if it is nothing else, and it is useful to examine the way in which the theory relating to the entity concept has been applied (either explicitly or implicitly) by practitioners. A useful first step in this respect is to examine how the professional accountancy bodies have reviewed it.

Until recently, the conventional approach by practitioners to the accounting entity concept appeared to be largely proprietary in attitude. It was never explicitly stated in professional pronouncements, but could be inferred from them. For example, a typical approach to the matter is contained in the following quotations from two such statements:

> The primary purpose of the annual accounts of a business is to present information to the proprietors showing how their funds have been utilised and the profits derived from such use.[8]

And more specifically in relation to companies:

> ... the object of the annual accounts is to assist shareholders in exercising their control of the company by enabling them to judge how its affairs have been conducted.[9]

These are obviously relatively narrow views of the proprietary approach to financial reporting, but can be said to have received general acceptance over many decades in the United Kingdom. Recently, however, there has been an apparent change in perception of financial reporting matters. This has tended to involve a switch in emphasis away from a preoccupation with entity ownership towards the social view of business activity in which various vested interests co-exist. It is best described by quoting from a recent discussion paper from the Accounting Standards Committee:[10]

> In our view there is an implicit responsibility to report publicly (whether or not required by law or regulation) incumbent on every economic entity whose size or format renders it significant.
>
> We consider the responsibility to report publicly is separate from and broader than the legal obligation to report and arises from the custodial role played in the community by economic entities.
>
> The reporting responsibility we identify is an all-purpose one, intended for the general information of all users outside those charged with the control and management of the organisation.

This approach appears to have its origins in the proprietary theory, and still contains elements of a stewardship function in its emphasis on a reporting to external interests and the custodial role of economic entities. However, its multi-purpose philosophy, involving many significant groupings of vested interests, suggests an orientation primarily towards the entity as a social institution operating for the specific benefit of each of these groups. In other words, this could be determined as an enterprise approach to the accounting entity concept, and a detailed reading of the Committee's paper provides further evidence of this viewpoint—particularly in its strong advocacy of an essentially enterprise theory-based financial statement—the statement of value added.[11]

What this very brief analysis of evolving professional attitudes in accounting theory has attempted to reveal is that United Kingdom practice is probably based on two relatively extreme perceptions of the accounting entity concept—the narrow proprietary viewpoint which concentrates attention on the particular interests of the entity's ownership; and the broad social approach of the enterprise theory which emphasises the entity as a material social unit within the community. The former approach has dominated financial reporting (particularly of companies) in the past and is undoubtedly still in existence. The latter, however, is relatively new to the scene but has already made a limited impact (particularly in the financial statements of large publicly-owned companies—for example, statements of money exchanges with government, transactions in foreign currency, and corporate objectives).[12] Each of these statements had been suggested in the previously-mentioned discussion paper of the Accounting Standards Committee. There is also some evidence in practice of companies producing social accounting statements as part of their annual reports.

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[8] 'Accounting in Relation to Changes in the Purchasing Power of Money', *Recommendations on Accounting Principles N15*, The Institute of Chartered Accountants in England and Wales, 1952, p. 1.

[9] 'Accountants' Liability to Third Parties', *Statement S8*, The Institute of Chartered Accountants in England and Wales, 1965, p. 2.

[10] *The Corporate Report*, Accounting Standards Committee, 1975, pp. 15–16.

[11] Ibid, pp. 49–50. The is not the first time that such a statement has been advocated within an enterprise-orientated system—for example, see W. W. Soujanen, 'Accounting Theory and the Large Corporation', *Accounting Review*, July 1954, pp. 391–8.

It is therefore interesting to note that two extreme interpretations of the accounting entity concept can co-exist in theory and practice. Thus, from the point of view of clarifying this area of financial reporting, it would appear sensible to examine how they influence some of the major financial reporting issues of the day—that is, financial accounting standards, generally, and inflation accounting proposals, particularly.

The accounting entity concept and accounting standards

Those writers who have dealt specifically and in detail with the accounting entity concept have usually indicated one matter in their conclusions—that is, different perceptions of the concept can lead to uniquely different measures and disclosures of income and financial position in financial statements.

In one particular paper, however, the matter has been analysed at a more fundamental level. Bird, Davidson and Smith have concluded that accountants must first reach agreement on the nature of external transfers and exchanges between the reporting entities and external parties.[13] This they feel should lead to unanimity regarding the question of whether the proprietary or enterprise approach to the accounting entity concept should be used as the main basis for financial accounting practice. They further concluded that consensus on such fundamental matters was necessary before guidelines could be formulated as to the valuation of the flows of goods and services which are the bases for measuring entity income and financial position.

In other words, their progamme for financial accounting reform is the relatively persuasive one of, firstly, agreeing on the nature of the external transactions of reporting entities; secondly, from the results of the first stage, deciding on which of the two main interpretations of the accounting entity concept is most appropriate for use in practice; and, thirdly, producing and adopting accounting valuation guidelines which are theoretically consistent with the chosen concept. That this process has not been followed in practice to date is not hard to evidence, and the remainder of this paper is devoted to providing proof of this by analysing professional pronouncements on financial accounting practice. This will reveal an obvious lack of attention to the accounting entity concept, and a resultant confusion in the formulation of practice standards. In order to provide this evidence, the work of the Accounting Standards Committee has been used to a great extent, and is as contained in a recent publication of The Institute of Chartered Accountants in England and Wales.[14]

The first point that arises from an analysis of this material is that, in each of the existing 7 *Exposure Drafts* (hereafter EDs), and 13 *Statements of Standard Accounting Practice* (hereafter SSAPs), there is no explicit mention of the accounting entity concept. Given the fundamental importance of these professional pronouncements to the financial reporting function, this is somewhat surprising. If, as writers on the concept suggest, the choice of approach to it could materially influence the nature and meaning of the accounting information reported in financial statements, it is odd that the major accounting standards (both in use and suggested for use) should bear no immediate reference to the issue. The same can be said for a similar lack of reference in two other recent accounting documents—the Sandilands Report on Inflation Accounting[15] and the previously-mentioned discussion paper on reporting objectives and uses.[16]

This consistent lack of attention to the accounting entity concept in the area of financial accounting standards suggests an ignorance of the importance of theoretical considerations when determining reporting practice. It also suggests that the standards themselves must be examined in detail for any clues or implied references to the status of the concept in practice. Unfortunately, not all of the standards (or potential standards) contain sufficient hints to come to any meaningful conclusion in every case. The following are therefore offered as being of some assistance.

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[12] For evidence of this see *Survey of Published Accounts 1978*, The Institute of Chartered Accountants in England and Wales, 1979, passim.

[13] F. A. Bird, L. F. Davidson and C. H. Smith, 'Perceptions of External Accounting Transfers Under Entity and Proprietary Theory', *Accounting Review*, April 1974, pp. 233–44.

[14] *Accounting Standards 1979*, The Institute of Chartered Accountants in England and Wales, 1979.

[15] 'Inflation Accounting', *Report of the Inflation Accounting Committee*, HMSO, 1975.

[16] *The Corporate Report*.

Accounting standards related to fundamental issues

Certain EDs and SSAPs cover aspects of financial accounting and reporting which can only be described as fundamental. These are all directed mainly at the structure of financial statements to be published by reporting companies—the first covers the underlying conceptual framework and the strategy for disclosure of accounting practices adopted (SSAP 2);[17] and a further two are concerned with identifying specific entities for financial accounting and reporting purposes (SSAP 10 and SSAP 14).[18] The nature of each of these pronouncements requires a direct reference to the accounting entity concept and yet none has been made. Reference to the concept therefore has to be by implication or inference in these cases.

SSAP 2 covers the fundamental concepts and practices which companies are expected to adhere to in their financial statements. Included in these is the 'going concern' concept which states:[19]

> The enterprise will continue in operational existence for the foreseeable future. This means in particular that the profit and loss account and balance sheet assume no intention or necessity to liquidate or curtail significantly the scale of operations.

The implication of such a concept is that what is being accounted for is an enterprise with an indefinite life, rather than its proprietorship. Certainly, the existence of the enterprise and its operations, separate from its proprietorship, appears to be acknowledged in this definition.

SSAP 10 and SSAP 14 both imply an enterprise approach to the accounting entity concept.

SSAP 10 is unreservedly enterprise-oriented as it deals with the production by companies of source and application of funds statements. These accounting documents are undoubtedly neutral in their outlook, emphasising the activities of the enterprise as a whole, and de-emphasising the income concept which tends inevitably to be oriented to some conception of ownership.[20] Indeed, SSAP 10 concentrates on a particular aspect of enterprise financial activity—the periodic change in working capital, generally, and net liquid funds, particularly.[21]

SSAP 10, on the other hand, is concerned with the financial accounting and reporting of groups of companies and, as such, recognises the group as a separate economic as well as legal entity.[22] It defines the recommended consolidated financial statements as follows:[23]

> One form of group accounts which combines the information contained in the separate financial statements of a holding company and its subsidiaries as if they were the financial statements of a single entity.

There is, however, some conflict in approach in that, despite such recognition, the recommended accounting procedures required to produce consolidated financial statements also imply a proprietary approach, with the measurement and disclosure of enterprise income and financial position in terms of the shareholders of the holding company—minority interests being separately dealt with.[24]

Overall, therefore, these three examples of accounting standards in the United Kingdom provide evidence of a fairly consistent, enterprise-orientated approach to financial reporting in the corporate sector. This, however, should not be taken as conclusive evidence of such an approach as interest and taxation deductions (for example) are typically not treated as distributions in UK company financial statements. The next section looks at more specific standards for further evidence.

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[17] 'Disclosure of Accounting Policies', *Statement of Standard Accounting Practice 2*, 1971.

[18] 'Statements of Source and Application of Funds', *Statement of Standard Accounting Practice 10*, 1975; 'Group Accounts', *Statement of Standard Accounting Practice 14*, 1978.

[19] *SSAP 2*, para. 14.

[20] Two writers have specifically recommended funds statements as a means of resolving the accounting entity concept problems—see W. J. Vatter, 'The Fund Theory of Accounting', *Australian Accountant*, March 1956, pp. 111–124; and W. W. Soujanen, 'Enterprise Theory and Corporate Balance Sheets', *Accounting Review*, January 1958, pp. 56–65.

[21] *SSAP 10*, para. 11; see also R. S. Gynther, *Accounting for Price-Level Changes*, Pergamon, 1966, pp. 194–5.

[22] For a detailed discussion of this matter, see J. R. Hoggett and K. J. Leo, 'Consolidated Statements: How Aims Influence Procedures', *Australian Accountant*, March 1972, pp. 49–54.

[23] *SSAP 14*, para. 12.

[24] *Ibid*, para. 34.

Accounting standards related to allocation and valuation

There are a number of pronouncements which can be grouped in this section—the main emphasis being on accounting standards which attempt to regulate the processes of allocation and valution in financial reporting. They are therefore standards which contain a great deal of subjective judgment in their implementation and which, consequently, would appear to require some guidance regarding the nature of the accounting entity concept. (It should be noted, however, that standards on the subject of inflation accounting are dealt with in a later section.)

SSAP 8 (treatment of taxation in financial statements),[25] and SSAP 13 (accounting for research and development expenditure),[26] and SSAP 15 (accounting for deferred tax)[27] are all concerned with some aspect of allocation and classification of expenditure, and each provides interesting insights into the accounting entity concept. Those dealing with tax will be examined first.

SSAP 15 is a replacement of SSAP 11. The latter recommended the 'smoothing' of taxation on expenditure by the process of deferral. The proprietary nature of this recommendation is evidenced in the stated need to produce a relevant 'profits after tax' figure for dividend purposes:[28]

> The view is widely held, however, that it is the profit after taxation which is the best indicator of performance, being the fund of earnings which supports (or perhaps does not support) the distribution of profit by way of dividend.

SSAP 11, however, also contained a conflicting and confusing provision which appeared to be enterprise-orientated—funds set aside as deferred taxation were not to be treated as part of shareholders' equity (although they were not to be treated as a current liability either).[29] On the other hand; it could equally have been argued as being evidence of nothing other than confusion.

SSAP 15 takes an opposite view of the entity concept. It requires that timing differences in company taxation can be treated as liability deferrals when it can be evidenced that a liability will occur in the foreseeable future. If no such liability can be anticipated, then the 'smoothing' of taxation need not be undertaken. This represents an enterprise view of the entity as a going concern, and is very much a switch in emphasis away from 'smoothing' for dividend purposes (a proprietary view) to accounting for known or foreseeable liabilities (an enterprise view). The latter approach is confirmed in SSAP 8 which requires all corporation tax (including advance corporation tax on dividends) to be treated as taxation of the company rather than of its shareholders.

SSAP 13 also has an enterprise theme contained in it, expenditure on pure or applied research being regarded as part of the continuing operation required to maintain a company's business and its competitive position, and therefore not benefiting any particular accounting period; and development expenditure being associated with some expectation of success in terms of feasibility and viability.[30] The suggested accounting treatments of complete write-off in the first case, and periodic allocation in the second case, appear to be linked very definitely to the enterprise and its operations in specified periods whilst, at the same time, providing hints of the proprietary approach in the 'smoothing' decision. Overall, however, SSAP 13 conforms with the general enterprise approach of SSAP 8 and SSAP 15.

ED 3, SSAP 1 and ED 25 relate to valuation procedures within the historic cost system. ED 3 deals with valuation methods of accounting for acquisitions and mergers, and appears to imply a predominantly enterprise approach to both types of business combination.[31] Acquisitions by one company of another are to be accounted for at the 'fair' value of all the assets taken over; and mergers are to be accounted for as if there had been continuity of the businesses concerned. However, in the proposals for merger accounting, there remain hints of a proprietary theory. For example):[32]

> The main concept underlying a merger is one of continuity of the amalgamating businesses. No assets have been distributed to shareholders and no new capital has been subscribed. The only change that has taken place is in the separate ownerships which are considered to have been pooled into one common ownership and reallocated among the individual owners.

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[25] 'The Treatment of Taxation Under the Imputation System in the Accounts of Companies', *Statement of Standard Accounting Practice 8*, 1974.

[26] 'Accounting for Research and Development', *Statement of Standard Accounting Practice 13*, 1977.

[27] 'Accounting for Deferred Taxation'. *Statement of Standard Accounting Practice 15*, 1978.

[28] 'Accounting for Deferred Taxation', *Statement of Standard Accounting Practice 11*, 1975, para. 3.

[29] *SSAP 11*, para. 26.

[30] *SSAP 13*, paras. 20–21.

[31] 'Accounting for Acquisitions and Mergers', *Exposure Draft 3*, 1971.

[32] *Ibid*, para. 5.

SSAP 1 is concerned with the equity accounting for investments in associated companies.[33] Whilst recognising the legal and economic separation of the investing and associated companies, it highlights the need to adopt some form of consolidation procedure to provide fuller information to the investing company's shareholders. It does this by incorporating their share of the associated company's net income in its financial statement—an accounting which appears to be primarily proprietary in nature. As Hendriksen has stated in relation to a similar treatment of non-consolidated investments in subsidiaries:[34]

> The equity method for accounting for non-consolidated investments in subsidiaries also implies a proprietary concept. The parent's proportionate share of each year's income is added to the investment account on the theory that the income of the subsidiary accrues to the stockholders, including the parent corporation as the major stockholder. It may be argued, however, that this accrual is merely a reflection of an increase in the value of the stock held by the parent and is, thus, in accord with the entity view. However, there is little merit in this view, since the proportionate share of the recorded income of the subsidiary is at best a poor indicator of an increase in the value of the stock to the parent.

The recently published ED 25 has maintained the equity accounting approach of SSAP 1.[35] Although changing the definition of an associated company (by using the more subjective concept of significant influence) and disclosing additional information for balance sheet purposes (by using the equally subjective concept of fair value) ED 25's proposals retain a proprietary flavour.

The final pronouncement to be covered in this section is one which does not fit easily into any section in this paper, but which appears most to approximate to this one. SSAP 3 deals with the computation and disclosure of a familiar indicator of corporate financial performance—earnings per share.[36] As such, it involves matters of allocation and valuation. Earnings per share is most definitely a proprietary-orientated accounting datum and is widely used as the basis for share valuations. It therefore lacks any aspects of the enterprise theory approach which is to be evidenced in most of the standards examined in this section.

What this section of analysis has revealed is a not unsurprising confusion and inconsistency amongst the EDs and SSAPs related to allocation and valuation matters. SSAP 8 and SSAP 15 are predominantly enterprise-orientated; SSAP 3 is basically proprietary in nature (as was SSAP 11); ED 3 and SSAP 13 are based largely on the enterprise theory but have obvious proprietary biases; and SSAP 1 and ED 25, although mainly proprietary in outlook, have also enterprise implications. Such is the result of a lack of definition of what is an essential aspect of accounting theory and practice. The situation becomes no better when those pronouncements dealing with inflation accounting proposals are examined.

Accounting standards related to inflation accounting

In recent years in the United Kingdom, there has been considerable activity in the area of inflation accounting—that is, in seeking a practical substitute for the now largely discredited historic cost system. Since 1974, accountants in this country have been faced by the following professional or governmental pronouncements on the matter—Provisional SSAP 7 (suggesting the implementation of current purchasing power-adjusted historic cost statements);[37] the Sandilands report (recommending a system of current cost accounting);[38] ED 18 (advocating a relatively similar system to that of Sandilands);[39] and the Hyde Guidelines (providing a simplified version of ED 18);[40] and ED 24 (containing a further version of ED 18).[41]

Each of these documents contains its own unique features in relation to solving a fundamental problem of financial reporting—that is, the ability of entities to measure and report on the effects of price changes on their financial results. Each pronouncement has been a serious attempt to change the face of financial accounting and, as such, each should have had regard to the fundamental nature of the accounting entity concept. Indeed, it can be argued (and will be shown in later parts of this paper) that different perceptions of it could well lead to different advocacies of inflation accounting to replace or augment the historic cost system.[42] An examination of the pronouncements mentioned above will reveal that different perceptions of the accounting entity concept have been adopted in them (albeit inadvertently) and that they result in substantially different proposals on the inflation accounting issue.

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[33] 'Accounting for the Results of Associated Companies', *Statement of Standard Accounting Practice 1*, 1971.

[34] Hendriksen, *op cit*, p. 498.

[35] 'Accounting for the Results of Associated Companies', *Exposure Draft 25*, 1979.

[36] 'Earnings Per Share', *Statement of Standard Accounting Practice 3*, 1974.

[37] 'Accounting for Changes in the Purchasing Power of Money', *Provisional Statement of Standard Accounting Practice 7*, 1974.

[38] 'Inflation Accounting'.

[39] 'Current Cost Accounting', *Exposure Draft 18*, 1976.

[40] 'Inflation Accounting—An Interim Recommendation by the Accounting Standards Committee', 1977.

[41] 'Current Cost Accounting', *Exposure Draft 24*, 1979.

These proposals will be dealt with chronologically and will be concerned mainly with two fundamental features of income measurement—firstly, the asset valuation basis adopted (this provides the overall increment or decrement for the period from which income can be determined); and the capital maintenance decision (which divides the value increment or decrement between periodic income and capital adjustment, on the basis of an agreed definition of capital). Both matters relate to the eventual measurement of income and financial position, and both would appear to require a pre-determination of the accounting entity concept to be adopted—different approaches to the latter resulting in the use of different valuation procedures and capital maintenance decisions.

The accounting entity concept and PSSAP 7

Following recent developments in inflation accounting, Provisional SSAP 7 has been withdrawn from practice but remains as a major alternative solution to the problem of accounting for price changes.[43] For long considered as the preferred solution by the professional accountancy bodies, it eventually became an accounting standard in 1974. The substance of the standard was relatively straightforward—in order to preserve the purchasing power of shareholders' capital, the historic cost-based income and financial accounting data should be translated from money terms of varying purchasing power to current purchasing power terms. The means of doing this was to be a series of adjustments using the Retail Price Index.

The translation procedures involved in PSSAP 7 are reasonably well known, and essentially concern the maintenance of opening shareholders' capital in year-end purchasing power terms. The resultant income figure includes a purchasing power gain on company borrowings—shareholders being considered to benefit during a period of inflation at the expense of lenders. The translations involved in this process are not intended as a form of revaluation. Instead, they remain as basically capital maintenance procedures within the historic cost system.[44]

Nowhere in PSSAP 7 is there any mention of the accounting entity concept. Nevertheless, there is the strongest inference to be drawn from it that the proprietary approach is the only one being considered. The position of the ordinary shareholder group is paramount in this system of inflation accounting—the preservation of their capital, and the determination of a measure of income which reflects the maximum distribution which can be made to them in current purchasing power terms, form its central features. The entity as an economic enterprise separate from its legal ownership is clearly not contemplated in it.

In addition, it can be argued that the current purchasing power system implies an attention to eventual liquidation of owner's capital rather than continuity of the enterprise as a going concern, and thereby accentuates the proprietary approach to accounting—that is, the apparent need to maintain the purchasing power of the owner's capital assumes that he will be concerned at some future date with using the proceeds of that capital in order to consume or re-invest.[45]

The accounting entity concept and Sandilands

In 1975, the government-sponsored Inflation Accounting Committee (hereafter Sandilands) reported.[46] Set up originally because of increasing dissatisfaction with PSSAP 7, it represents a thorough examination of the inflation accounting problem and most of the main alternative solutions. Its main conclusions and recommendations are as follows: (a) account only for specific price changes; (b) account in money terms rather than current purchasing power terms; (c) account for the entity's assets on the basis of 'value to the business', a current valuation procedure utilising replacement costs, net realisable values and economic values; and (d) report on entity income in terms of its operating profit, arrived at after charging the value to the business of those assets consumed by the entity.

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[42] See Gynther ('Accounting Concepts'), pp. 286–8; and R. S. Gynther, 'Capital Maintenance, Price Changes and Profit Determination', *Accounting Review*, October 1970, pp. 712–30.

[43] As evidenced in its partial or implied advocacy in *Exposure Draft 18*, 'Inflation Accounting—An Interim Recommendation. . . .', and *Exposure Draft 24.*

[44] See T. A. Lee, 'Misleading Inflation Accounting: Translation Not Valuation', *Singapore Accountant*, 1976, pp. 42–4.

[45] See Gynther, *op cit*, pp. 46–7.

[46] 'Inflation Accounting'.

The implications of these recommendations are clear with regard to the accounting entity concept (which, once again, received no explicit attention in a major accounting pronouncement). The traditional proprietary approach advocated in PSSAP 7 was rejected as irrelevant. In fact, Sandilands had this to say of the current purchasing power concept:[47]

> The concept of 'general price changes' in the abstract, unrelated to the purchasing pattern of any class of individuals or entities, is unquantifiable. Price changes can only be measured by reference to the purchasing pattern of some class of individuals or entities, however broad the group of goods and services whose prices are to be measured and however wide the class of individuals or entities whose purchasing pattern is taken into account.

This dismissal of an essentially proprietary approach to the accounting entity concept confirms Sandilands' preference for the alternative enterprise approach. This is evidenced by a firm statement in enterprise terms of the main objective of accounting:[48]

> The task of accounting is to measure a company's 'net assets' at a particular date and its gain or loss during a particular period.

The treatment of operating gains as income, and the strong implication that holding gains are capital adjustments, further strengthens the enterprise inference. Such a definition of income suggests a productive or operating capacity type of capital maintenance decision, which is definitely enterprise-orientated. Valuing the entity's assets, using the familiar Bonbright-derived rule of 'the maximum loss the enterprise would suffer if deprived of the assets concerned', further diminishes the traditional proprietary influence.

The accounting concept of income and the CCAB

Although Sandilands definitely rejected any aspect of inflation accounting which could be construed as proprietary in nature, the professional accountancy bodies were obviously upset by this radical suggestion. As a result, the Consultative Committee of Accountancy Bodies responded by suggesting, *inter alia*, that a supplementary current cost accounting statement should be prepared incorporating current purchasing power adjustments—that is, the Sandilands capital maintenance decision was to be amended to one which maintained opening current value-based capital in current purchasing power terms.[49] This recommendation that proprietary adjustments should be introduced to an enterprise-orientated system recognises the traditional stewardship function in accounting. It also reflects the confusion which can arise when no clearly defined and generally accepted definition of the accounting entity concept is made.

The accounting entity concept and ED 18

The Accounting Standards Committee responded quickly to the recommendations of the Sandilands Committee and the Consultative Committee of Accountancy Bodies. In 1976 it produced ED 18 which advocated a system of current cost accounting.[50] As such, it utilised many of the recommendations of Sandilands—particularly, its advocation of the use of the 'value to the business' asset valuation rule, and the consequent segregation of operating and holding gains. However, there are substantial differences between Sandilands and ED 18 which suggest a different underlying interpretation of the accounting entity concept. As before, the latter has not been mentioned in a major accounting pronouncement, although there are adequate clues of an assumed approach in ED 18.

Although ED 18 recognises the separate nature of operating and holding gains, it does not support the enterprise-orientated entity concept to the same extent as Sandilands. Instead, it recommends that all gains of whatever nature should be taken to an appropriation account, in which the board of directors could decide how much of the total profit thereby aggregated should be distributed to shareholders. The following explanation of this treatment is provided:[51]

> This treatment recognises that, while the current cost profit provides a more realistic indicator than historical cost profit of the results of the business and of the amount that could be distributed without eroding the capital of the

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[47] *Ibid*, p. 12.
[48] *Ibid*, p. 19.

[49] 'The Accountancy Profession's Reaction to Sandilands', *Accountant's Magazine*, November 1975, pp. 374–6.
[50] *Exposure Draft 18*.
[51] *Ibid*, para. 136.

> business, it cannot, as the Sandilands Committee accepted, be the final determinant of either. There will be occasions when to distribute the whole of the current cost profits would be to erode the capacity of the business to continue on its existing scale.... There will be other occasions when to restrict dividend distribution to current cost profit would be unduly conservative....

Despite a firm statement in the guidance manual which supports ED 18 that the objective of current cost accounting is to restore the productive capacity consumed by the entity (an enterprise approach),[52] it is possible that the recommended appropriation account indicates a return to the proprietary interpretation of the accounting entity concept. The treatment of gains, whether operating or holding, is based on the question of potential distribution to shareholders; all gains are available for dividend purposes, and the directors must decide how much will be distributed. Thus, the pure enterprise approach of Sandilands has been avoided.

The reversion by ED 18 to the proprietary viewpoint is further evidenced in its advocacy of a statement of change in shareholders' equity. The aim of this statement is to reflect whether the opening current cost based shareholder capital has been maintained in current purchasing power terms when compared with the closing current cost-based capital. In other words, adjustments which Sandilands regarded as irrelevant to the inflation accounting of enterprises have been reintroduced to the debate.

ED 18 is a document which would have benefited considerably from a clear definition of the accounting entity concept. Because of the lack of such a definition, it is an inconsistent mixture of the enterprise approach (for example, the use of the 'value to the business' rule for asset valuation, and the half-hearted treatment of gains which only partly reflects maintenance of productive capacity) and the proprietary alternative (for example, the availability of all gains for distribution to shareholders, and the clear support of a concept of maintaining shareholders' capital in current purchasing power terms). As such, it has added confusion to the inflation accounting debate.[53]

The accounting entity concept and the Hyde Guidelines

ED 18 proved unpopular at 'grass-roots' level in the accountancy profession. Although not suffering the same fate as PSSAP 7, it has been put aside for the time being. In its place, the Accounting Standards Committee produced an interim recommendation for the inflation accounting problem—the Hyde Guidelines (hereafter Hyde).[54]

Hyde suggests a simplified version of ED 18 related specifically to the income statement. Adjusting for the current cost of sales and depreciation, it also recommends a 'gearing' adjustment to reflect that part of fixed asset and stock holding gains assumed to have been financed by monetary liabilities. As such, it is a variation of current purchasing power accounting, particularly that aspect which refers to the inflationary 'borrowing' gain attributable to shareholders at the expense of lenders and creditors.

The Hyde adjustments relating to stock consumed and fixed asset depreciation produce an enterprise-orientated income measure reflecting entity operating gains. However, the gearing adjustment introduces a relatively inconsistent proprietary tangent to the recommended income statement.

The accounting entity concept and ED 24

The Accounting Standards Committee has recently produced ED 24 which is intended to replace the Hyde Guidelines. It maintains some of the current cost adjustments contained in the latter (the cost of sales and additional depreciation adjustments), adds a further adjustment for the increased cost of monetary working capital, and amends the Hyde 'gearing' adjustment.[55] It also contains a substantial contradiction in approach to the entity concept. The various adjustments to profits, and the balance sheet use of current cost valuations and procedures are (as in ED 18 and Hyde) compatible with an enterprise definition of the entity (that is, in the maintaining of the enterprise's operating capability in terms of value to the business). However, in contradiction, the 'gearing' adjustment appears to follow a confused proprietary viewpoint of accounting (that is, maintaining shareholders' equity in terms of current costs, yet assuming increased costs in the future will be financed in the existing proportions of equity and long-term loans).

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[52] Inflation Accounting Steering Group, *Guidance Manual on Current Cost Accounting*, Institute of Chartered Accountants in England and Wales, 1976, p. 13.

[53] This has also been recognised by Stamp, *op cit.*

[54] 'Inflation Accounting—An Interim Recommendation ...', *op cit.*

[55] *Exposure Draft 24*, paras. 11–16.

A summary related to inflation accounting proposals

Recent United Kingdom proposals on inflation accounting have ignored the accounting entity concept, as was the case with the other accounting pronouncements examined in this paper. The consequences of this attitude are a state of confusion and inconsistency regarding the concept. For example, PSSAP 7 was almost wholly proprietary in nature; Sandilands rejected this approach, and advocated instead a largely enterprise-orientated system; the CCAB suggested a proprietary extension to the Sandilands proposals; ED 18 continued the proprietary swing back to the traditional approach, despite its obvious support for many of the Sandilands recommendations; and Hyde and ED 24 continued the mixed proprietary-enterprise approach previously outlined in ED 18.

The most obvious area in which this confusion and inconsistency is apparent concerns the capital maintenance decision and the related definition of reported income. The capital maintenance decision is entwined with the distribution decision and, therefore, with aspects of ownership. However, it need not be so narrowly construed. Much depends on whether it is enterprise capital (for example, in terms of productive capacity) or some version of ownership capital which is to be maintained. A proper examination and agreement on a definition of the accounting entity concept for financial reporting purposes should provide an acceptable basis for the capital maintenance decision. In time, this should ensure guidelines for the determination of reported income of the entity. Particularly, this could also help to resolve the problems of, firstly, whether or not holding gains are to be treated as income; and, secondly, whether current purchasing power adjustments are necessary and, if they are, whether or not they are translations for capital maintenance purposes only.[56]

Conclusions

The accounting entity concept is widely accepted (at least in the accountancy literature) as one of the most fundamental aspects of financial accounting and reporting. It is also one of the most neglected. An examination of a number of recent and important accounting pronouncements in the United Kingdom provides evidence of this. It also indicates the potential for confusion and inconsistency in accounting treatment of such crucial matters as income and financial position measurement. It is time that accountants ceased to compound the complexities of financial accounting by ignoring one of its cornerstones.

What is required is a firm commitment to a particular approach to the entity concept which is compatible with acceptable reporting objectives. For example, if the agreed aim of accounting is to report to the owners of enterprises then the proprietary approach would be suitable. On the other hand, if a societal view is taken of report users then the enterprise approach is the more relevant. In other words, a clear statement of accounting and reporting objectives should determine the particular interpretation to be taken of the accounting entity concept underlying all accounting standards. Such consistency in interpretation should eliminate the confusion which exists presently in the published standards of the Accounting Standards Committee. Sadly, despite *The Corporate Report*, no clear statement of accounting objectives has yet emerged from the Committee.

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[56] See, for example Gynther ('Capital Maintenance'), and R. S. Gynther, 'Why Use General Purchasing Power?', *Accounting and Business Research*, Spring 1974, pp. 141–56.

Inflation Accounting: a Bit of Philosophy and a Lot of Simplification

Ken Goodwin[1]

In the American Financial Accounting Standards Board's discussion memorandum *An analysis of the issues related to the conceptual framework of accounting and reporting: elements of financial statements and their measurement* the following questions were put:

Should net income for a period be defined as revenues less all applicable expenses (which is what we do now) or should net income be determined by measuring the difference between beginning of the period net assets and end of the period net assets? Should we continue to rely on recording only the historical costs of actual transactions (as we basically do now) or should we switch to some basis of reporting asset values and changes in values in the absence of a specific transaction?

The writer of this article believes that future accounting development should be based on the two second alternatives, i.e., a change in measuring both profit and asset values is indicated. The Sandilands Report is an important document as regards the latter, but neither this nor the subsequent Hyde and ED24 proposals adequately cater for the former either from the point of view of concepts or practical implications. Based on case study work in recent years, the writer has developed an inflation accounting model which brings into account both suggested changes, within a framework which, once the arithmetic is fully understood, has proved from actual case study work to be flexible and easy to apply over a wide range of sectors.

The article discusses the merits and methodology of this model in such a way that readers should be able to apply the concepts to their own companies by adapting the model to their own practical circumstances.

From recent debate on inflation accounting it is evident that many of us are obsessed by a number of myths, most of which have their roots in the Sandilands Report. Four of these myths are:

1. A company is obliged to replace its tangible assets by new assets of the same type.
2. There is no such thing as 'general inflation'.
3. For general purchasing power accounting to work, there would have to exist an individual price index for each one of us, to reflect our personal spending pattern.
4. A universally applicable accounting system is Utopia and is therefore not attainable.

Turnover of physical assets

In the case of myth no 1, I have yet to come across the company which replaces its fixed assets after five, ten or fifty years with assets of exactly the same specification or even the same 'productive capacity'. The fact is: they don't. Companies are dynamic; technological progress, new products and volume change see to that. Even fast-rotating inventories are subject to replacement on a preferential basis as specific products become more profitable with more market acceptance, are phased out as obsolete or unprofitable, or are redesigned.

In a recent study of the operations of a Spanish company marketing electronic products, the replacement cost idea was attempted, not for accounting reasons, but as a means of identifying the reasons for the rapidly deteriorating profit position. The work was eventually abandoned because no one was quite sure which new product was replacing which old product. Replacement cost accounting for this company was not only impracticable but also the validity of the results would have been doubtful (accumulation of holding losses during a period of 25% annual inflation would seem to be acceptable only to the most naive of us). I feel that virtually all companies are exceptions to the replacement cost rule, to a greater or lesser degree, not just banks, building contractors, companies manufacturing low volume specialised products and the like. In fact, most companies have, to a limited degree, 'banking' operations such as financing clients or being financed by suppliers. Even companies with a standard product range may from time to time manufacture special one-off or one batch products or may adapt their standard range to the particular requirements of individual customers.

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[1] The ideas in this article are personal and do not necessarily reflect the opinion of the author's employers (Price Waterhouse & Co.)

Physical v. economic status

In many instances, it is not even essential to maintain volumes in order to maintain relative economic status (although for commercial reasons it may be convenient to do so). For instance, if a metal merchant buys one kilo of a certain metal for £1 and later sells it for £4 (because its market price has quadrupled and replacement cost is also £4), under CCA the resultant 'economic surplus' of £3 will be regarded as a holding gain which means that no one knows whether it is a profit or not. The concept of a holding gain is interesting and credit should be given to the original thought which has gone into developing the concept. However, a difficulty arises when the merchant decides to distribute a dividend of £3 and replenish the missing stock with only one quarter of a kilo which he buys for £1. Although his physical volume has decreased, his relative economic status in society is maintained (assuming no general level of inflation during the period in question). I feel that the £3 is not only profit but, furthermore, is realised profit. Therefore, equity is not being run down by the profit distribution of £3, although the merchant could of course have chosen to replace a whole kilo of the metal in which case the question would have arisen as to whether the holding gain had been realised or not.

General inflation really exists

As regards myth no 2, having lived for a number of years in countries with relatively high inflation (Brazil and post-petroleum crisis Spain), I can assure readers that general inflation really does exist and that, over a period of time, the effect on each pocket is about the same (this leads us to myth no 3). Our spending patterns are not rigid; when coffee prices go up, we drink tea. The idea that indexing of equity would be valid only if shareholders' spending patterns were analysed to produce individual indices is academic nonsense.

The fourth myth is probably better discussed by the presentation of an alternative scheme which, I feel, does have universal application (including to overseas subsidiaries), at the same time requiring much less effort than CCA. This scheme is presented here in the form of an example.

Concepts involved

The concepts listed below, which provide the basis for the example, have been carefully chosen to provide a balance between accounting logic and simplicity.

(i) Annual profit is assumed to be the accumulation of wealth in the company, expressed as the increase in the general purchasing power of net assets during the year after adjusting for dividends and new capital subscription.

(ii) Equity is indexed, using a general price index, and adequately protected on this basis before a profit is said to be made.

(iii) Fixed assets are separated between those consumed during the normal course of business (depreciable assets) and those held for resale or which may be subject to speculative fluctuations in value (non-depreciable assets, usually land and investments).

(iv) Fixed assets which are consumed in the business are assumed to maintain their value against general inflation. Any holding gain resulting from revaluation will be exactly offset by the equivalent increment resulting from indexing equity. Therefore, no *net* holding gain on these assets appears in the profit and loss account. (Under CCA, a holding gain results but this information is useless and may be misleading, as the company will have no intention—nor possibility in all likelihood—of selling the assets to realise such a gain.)

(v) Fixed assets consumed in the business are depreciated on the basis of revalued amounts.

(vi) Non-depreciable assets are separated in the balance sheet (this in itself will be a useful disclosure) and are valued at current value, i.e. valuer's estimate, quoted price or the like (such valuations will imply only a fraction of the effort necessary under a full-blooded CCA scheme).

(vii) Inventories are valued at replacement cost or latest standard cost (this in itself will simplify many inventory valuation systems).

(viii) Whether holding gains are realised or not is a problem of cash planning and dividend policy.

Master Balance Sheet

	Column 1 *End of year 5* *Historical*	*Column 2* *End of year 5* *Valuation increments*		*Column 3* *End of year 6* *Historical*	*Column 4* *Average year 6* *Historical*	*Column 5* *Theoretical revalued balances*	*Column 6* *Final revalued balances*
			Fixed Assets Consumed in the Business				
A	2,000	1,889	Plant	2,000	2,000	4,667	4,667
B	(800)	(867)	(−)Accumulated depreciation	(1,000)	(900)	(2,221)	(2,467)
	1,200	1,022		1,000	1,100	2,446	2,200
			Non-depreciable Assets				
C	500	1,500	Land	500	500	2,400	2,100
D	300	700	Quoted investments	300	300	1,200	1,400
	800	2,200		800	800	3,600	3,500
			Current Assets				
E	1,000	50	Inventories	1,300	1,050	1,570	1,340
F	1,200	—	Debtors	1,500	1,380	1,776	1,500
G	200	—	Cash	300	240	348	300
	2,400	50		3,100	2,670	3,694	3,140
			Liabilities				
H	(400)	—	Loans	(200)	(250)	(250)	(200)
I	(300)	—	Creditors	(350)	(250)	(400)	(350)
J	(100)	—	Deferred tax	(100)	(100)	(120)	(100)
	3,600	3,272	Net Assets	4,250	3,970	8,970	8,190
			Comprising:				
K	3,000	4,500	Capital	3,500	3,250	9,550	9,550
L	600	186	Retained earnings	600	600	943	943
M	—	—	Year's profit (loss)	150	120	174	(606)
N	—	(1,414)	Revaluation surplus (deficit)	—	—	(1,697)	(1,697)
	3,600	3,272		4,250	3,970	8,970	8,190

Note: columns 1, 2, 4 and 5 are working columns only. Final results are shown in columns 3 (historical) and 6 (revalued).

Comments on Master Balance Sheet

Column 1

		£	
Capital subscribed	1 Jan year 1	3,000	
Fixed assets purchased	1 Jan year 1	1,500	(land 500, plant 1,000)
	1 Jan year 3	1,000	
		2,500	
Depreciation rate		10%	
Building is rented			
Retained earnings accumulated:	Year 1	(100)	
	Year 2	100	
	Year 3	300	
	Year 4	200	
	Year 5	100	
		600	

Column 2

General price indices:

		End of year	*Average*
Retail price index	Year 0	100	—
	Year 1	120	115
	Year 2	150	135
	Year 3	180	170
	Year 4	200	190
	Year 5	250	220
	Year 6	300	—

Valuation increments:

	£ *Gross value*	£ *Accumulated depreciation*
Plant: Year 1 $£1,000(500) \times \frac{250 - 100}{100}$	1,500	(750)
Year 3 $£1,000(300) \times \frac{250 - 180}{180}$	389	(117)
	1,889	(867)

Land — Current valuation = 2,000

Increment = 1,500

Quoted investments — Current valuation = 1,000

Increment = 700

Inventories — Replacement cost (or current standard cost) = 1,050

∴ Increment = 50

Capital: Year 1 — $£3,000 \times \frac{250 - 100}{100}$ = 4,500

Retained earnings: Year 1 $£(100) \times \frac{250 - 115}{115}$ = (117)

Year 2 $£100 \times \frac{250 - 135}{135}$ = 85

	£	£ *Accumulated depreciation*
Year 3 £300 × $\frac{250-170}{170}$	=	141
Year 4 £200 × $\frac{250-190}{190}$	=	63
Year 5 £100 × $\frac{250-220}{220}$	=	14
		186

Revaluation surplus (deficit) = balancing figure

Column 3

	£
Capital subscribed on 30 June, year 6	500
Loan repaid in April, year 6	200

Column 4

Straight average of monthly balances

Column 5

Concept: if all historical balances were capable of 'attracting' increments at the same rate as general inflation, the resulting revalued balances would appear in this column.

Formula:

$$[a \times (\text{col. } 2 + \text{col. } 4)] + \text{col. } 2 + \text{col. } 3$$

$$a = \frac{\text{This year end index} - \text{previous year end index}}{\text{previous year end index}}$$

$$= \frac{300 - 250}{250} = 20\%$$

example: Inventories:

$$[20\% \times (£50 + £1{,}050)] + £50 + £1{,}300 = £1{,}570$$

Note: This formula applied to capital and retained earnings will give almost exactly the same final result as if the conventional CPP method had been used,

example: Capital, using above formula:

$$[20\% \times (£4{,}500 + £3{,}250)] + £4{,}500 + £3{,}500 = £9{,}550$$

using conventional CPP methods:

$$\text{Year 1 } £3{,}000 \times \frac{300}{100} = £9{,}000$$

$$\text{Year 6 } £500 \times \frac{300}{(250 + 300)} \div 2 = £\ 545$$

$$£9{,}545$$

Reason: This column permits a self balancing link to be maintained thus facilitating reconciliation of profit and loss account and balance sheet without resorting to complex procedures.

Column 6

Plant: Gross value = Column 5. (There is perfect compatibility between the timing of fixed asset purchases and the evolution of this account, unless there are sales of fixed assets. If this were the case, the assets sold—gross value and accumulated depreciation—would have to be separated on the balance sheet, a nil value being attributed to column 6. As values would appear as usual in column 5, a loss would result—see additional comments later.)

Plant: accumulated depreciation:

$$\text{Year 1 assets: } £(600) \times \frac{300}{100} = £(1{,}800)$$

$$\text{Year 3 assets: } £(400) \times \frac{300}{180} = £(\ 667)$$

$$£(2{,}467)$$

Land: Current valuation = £2,100

Quoted investments: Current valuation = £1,400

Inventories: Replacement cost (or current standard cost) = £1,340

(In practice inventories would be valued directly at replacement or current standard cost.)

Debtors, Cash, Liabilities = Column 3

Capital, retained earnings, revaluation surplus (deficit) = Column 5

Year's profit (loss) = balancing figure (see below for reconciliation)

Profit Reconciliation	£	£	*Reference*
Historical profit (loss), year 6		150	M3
+Adjustment to bring figure to year end £s		24	M5 − M3
		174	M5
(−)Additional depreciation		(246)	B6 − B5
(−)Loss in value of land:			
Notional increase	100		C6 − C1 − C2
Diminishing purchase power of £	(400)		C1 + C2 − C5
		(300)	C6 − C5
+Increase in value of quoted investments:			
Notional increase	400		D6 − D1 − D2
Diminishing purchase power of £	(200)		D1 + D2 − D5
		200	D6 − D5
(−)Inventory 'profits'		(230)	E6 − E5
(−)Purchase power reduction of monetary assets:			
Debtors	(276)		F6 − F5
Cash	(48)		G6 − G5
		(324)	
+Purchase power reduction of monetary liabilities:			
Loans	50		H6 − H5
Creditors	50		I6 − I5
Deferred tax	20		J6 − J5
		120	
Adjusted profit (loss) in year end £s		(606)	M6

Suggested Profit and Loss Format

	**Historical profit*	*Adjustments*		*Adjusted profit*
Trading	£	£	Ref.	£
Sales	4,000			4,000
Cost of sales	(2,500)	(230)	E	(2,730)
Administration and selling expense	(990)			(990)
Depreciation	(200)	(246)	B	(446)
Operating monetary items		(274)	F, G, I	(274)
	310	(750)		(440)

	*Historical profit	Adjustments		Adjusted profit
Investment				
Taxes and expenses of maintaining land	(20)		C	(320)
Land value change		(300)		
Dividends received	50		D	250
Quoted investments value change		200		
	30	(100)		(70)
Financing				
Interest paid	(40)		H	10
Purchasing power gain on loans		50		
	(40)	50		10
Total Profit (Loss) before Tax	300	(800)		(500)
Tax				
Current	(150)			(150)
Deferred	—		J	20
Purchasing power gain on deferred tax		20		
	150	(780)		(630)
Adjustment to Year End £s		24	M	24
Profit (Loss) after Tax	150	(756)		(606)

*Except for depreciation and profit (loss) after tax, the figures shown in this column are new to the example.

Additional comments

In practice, there are some fairly minor complications in the preparation of the master balance sheet, which is the key to the detailed procedure. Four complications have been located to date. One relates to the final destiny of the previous year's profit and does not affect the UK, as profit is usually appropriated to dividends and retained earnings before the year's balance sheet is closed off. They are in general easily remedied. Solutions have been developed and were tested in the case study mentioned later with positive results; suggested solutions for the other three are as follows:

Fixed asset disposal

Where there are disposals of fixed assets during the year, the Column 5 revalued amount (line A) will not coincide with the Column 6 figure. The formula applied in the calculation of the Column 5 figure is only valid for Column 6, if the fixed asset account remains constant during the year or evolves in line with the ageing of the assets which provoke a change of account balance.

In other words, if there are additions in the year, the account balance will increase exactly at the time of aquisition and, therefore, the formula is valid for Column 6. If, however, there are disposals during the year, the account balance will diminish; but the timing of this reduction will not coincide with the ageing of the asset in question, which will have been purchased at an earlier date.

In order to remedy this situation it is necessary to create two subtitles under the heading 'Fixed assets consumed in the business', i.e., assets held at the end of the year and assets retired during the year. It is then necessary to separate the Columns 1, 2, 3 and 4 gross and accumulated depreciation figures. Column 5 figures (and Column 6 figures for assets held at the end of the year) are calculated in the normal way. Obviously, a zero residual value must be attributed to Column 6 for assets sold during the year, but in Column 5 a positive number will appear unless the retired assets are fully depreciated (in which case there will be a zero residual value).

If the assets are not fully depreciated at the time of disposal, this will give rise to a difference between the Column 5 and 6 numbers which will affect unfavourably the inflation adjusted profit and loss account. This additional loss, plus the loss (or less the gain) already shown in the historical profit and loss account, will be the equivalent of the difference between the updated (revalued) residual value of the asset and the sale proceeds (i.e., equivalent to the 'real' loss, assuming the former is greater).

Defects in monthly accounting system

Although the Column 4 figures could be built up synthetically, the more usual approach would be to take averages directly from the monthly or quarterly balance sheets where these, of course, exist. The problem arises when the principles applied in the monthly system differ from those applied at the end of the year in the statutory financial statements. In the case study mentioned later, the company concerned brought depreciation and corporation tax into account only at the year end. In this case it was necessary to restate profit and calculate corporation tax monthly, and also to change the balance sheet figure for fixed assets (accumulated depreciation), creditors (current taxation) and equity (profit for the year) before taking out the Column 4 averages. Similar adjustments will be required if other 'defects' in the monthly accounting system exist. Corrections of this sort will normally only need to be made if significant. Accounting is not a precise science, much less so inflation accounting.

Subsidiaries and investments in non-quoted companies

As a general rule, it is suggested that the same revaluation procedure adopted by the company concerned also be applied to its subsidiaries and non-quoted investments. In practice, a simplified procedure, similar to the one mentioned later, could be applied to non-consolidated subsidiaries, where sufficient information may not be available to apply the more detailed procedure. Investment in non-consolidated subsidiaries should be shown at the revalued equity amount.

Similar procedures should be applied to foreign subsidiaries and foreign non-quoted investments, the revaluations being made in local currency. The revalued amounts should then be translated to £ using the closing rate method. This will not only allow updated equity amounts to be shown in the financial statements of the British company, but will also provide valuable information for the foreign company management and avoid the necessity to apply subjective and illogical translation methods such as the closing rate method applied to historical figures, or the historical rate method.

Simplified procedure

In the following example, a simplified procedure is demonstrated using the basic information of the previous example. The annual adjustments under the simplified procedure, apart from the requirement of a valuer's estimate for certain non-depreciable assets, take no more than an hour or so to make. The procedure is particularly useful in the preparation of monthly information where an approximation to real profit is required.

	Profit & Loss £	*Equity £*
Historical figures	150	4,250

*Depreciable assets**

Average age of plant =

$$\frac{\text{Accumulated depreciation}}{\text{original cost} \times \text{depreciation rate}} = \frac{\pounds(1{,}000)}{\pounds 2{,}000 \times 10\%} = 5 \text{ years}$$

$$\text{Adjustment based on } \frac{\text{End of year 6 index} - \text{Index 5 years ago}}{\text{Index 5 years ago}}$$

$$= \frac{300 - 120}{120} = 150\%$$

		Profit & Loss £	*Equity £*
Adjustment:	150% × year 6 depreciation charge = 150% × £(200) =	(300)	
:	150% × net historical value at end of year 6 = 150% × £1,000 =		1,500

	Profit & Loss £	Equity £
'Working capital' maintenance, based on Brazilian method**		
Adjustment = (Current assets less liabilities) × year's inflation rate = based on averages,		
$(£2,670 - 600) \times \frac{300 - 250}{250} =$	(414)	
Items valued at current value (non-depreciable assets)		
Adjustment: New value − [previous year's value × (year's inflation rate + 100)]		
= £3,500 − (£3,000 × 120%) =	(100)	
: New value − [previous year's value		
£3,500 − £800 =		2,700
	——	——
Revalued figures (simplified procedure)	(664)	8,450
Revalued figures (detailed procedure—see above) (i)	(606)	8,190
Error factor as % of (i), by using:		
Simplified procedure	10%	3%
Conventional accounting principles	125%	48%

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*In practice, and to increase accuracy, these calculations would normally be made separately for each group of assets having the same depreciation rate.

**For further details, see the Price Waterhouse publication *Doing Business in Brazil.*

Suggested procedure applied to actual case study in Spain

(To avoid identification of the company, values are shown as percentages of historical cost of fixed assets)

		Year of revaluation *1*	*2*
Historical profit		2.6	4.1
Revalued profit	(detailed procedure)	11.4	8.3
Revalued profit	(simplified procedure)	11.2	8.4
Historical equity		22.2	68.8
Revalued equity	(detailed procedure)	50.3	115.0
Revalued equity	(simplified procedure)	51.6	120.0
Profit ÷ equity:	historic basis	11.7%	6.0%
	revalued basis (detailed)	22.7%	7.2%
	revalued basis (simplified)	21.7%	7.0%

Note: The unusual revalued profit figures result from the very high gearing of the company resulting in considerable monetary gains. Some loans were paid off in the second year.

The revaluation procedure (detailed) is applied annually to this company, with the minimum of time and effort and without the use of a computer.

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Walter Taplin Prize

The Association of University Teachers of Accounting, the Council of Departments of Accounting Studies and *Acccounting and Business Research* offer a prize of £75 for the best article published in each annual volume. The prize is named in honour of the journal's founding editor, Walter Taplin.

The winning article is chosen by the subscribers. Their choice in 1977/78 was Mark Tippett, *The Axioms of Accounting Measurement* (Autumn 1978).

Forthcoming Conferences

The Third International Congress of Accounting Historians will be held at the London Business School on August 16, 17 and 18, 1980. The 1981 conference of the Association of University Teachers of Accounting will be held at the University of Dundee. The 1981 European Accounting Association conference will be held at the Instituto de Estudios Superiores de la Empresa, Barcelona.

Divisionalisation in British Industry: a Preliminary Study

M. A. Ezzamel and K. Hilton

1. Introduction

Although modern economic theories of the firm recognise the importance of organisational structures, few attempts have been made to measure the economic effect of particular organisational arrangements on the performance of the firm. This study attempts to evaluate the impact of divisionalisation, as one characteristic of organisational structure, on one measure of the economic performance of companies. The approach is in part theoretical, developing the possibility of a measure of divisionalisation, and considering how the impact of this variable on a company's performance may be affected by economic factors. Following the argument of the efficient market hypothesis, a market-based measure of success—a simple relative share price model—has been developed to help in assessing the contribution of divisionalised structures to company performance. Some empirical evidence, based on UK survey data and stock market prices, is adduced to see how far the theoretical ideas are supported by the facts.

2. Decentralisation and the theory of the firm

An inspection of the literature on the theory of the firm reveals considerable concern with the identification and analysis of factors that constrain the rate of growth of a firm. Managerial structure has been identified as one of these constraints.[1] Most economists argue that progressive decentralisation of authority is a necessary condition for continued growth beyond a relatively small size of firm.[2] As the firm expands, a new subdivision of its managerial structure takes place and, consequently, a further measure of decentralisation is introduced. This progression of decentralisation with size is normally considered as an adaptive mechanism which allows a firm to achieve economies of scale; increased subdivision of managerial structure is often necessary to prevent unit costs from rising with higher levels of output.

Leibenstein, however, argues that growth in the size of a firm will, usually, be accompanied by the centralisation of some activities and the simultaneous decentralisation of other activities: 'Clearly, it would be difficult to say whether, on balance, the total effect is one of greater decentralisation or one of greater centralisation'.[3]

Although Leibenstein's arguments are plausible, his argument that we cannot tell whether the *total* effect is greater decentralisation or greater centralisation has been strongly challenged by the findings of empirical studies. Haire [10], Whisler [25], and Chandler [5, Chapter 1] have shown that growth in the size of the firm is one of the most important factors associated with increases in decentralisation.[4]

Whereas economists have been concerned with problems of the size of the firm, behavioural

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[1] For example, in discussing the economies of size, Penrose identifies technological economies, managerial economies, and financial economies as the variables on which the size of a firm is dependent. See Penrose, Chapter VI [19, 20].

[2] Penrose [20, p. 98] goes to the extent of arguing that 'We have rejected the proposition that there is for every firm some *optimum* size beyond which it will run into diseconomies. Only for firms incapable of adapting their managerial structure to the requirements of larger operations can one postulate *an* optimum size.'

[3] Leibenstein [11, p. 258].

[4] It is explicit in Leibenstein's argument that the reason for the difficulty of identifying the nature of the total effect (i.e., whether greater decentralisation or greater centralisation) is that decision-making areas are not 'additive' since different coefficients of relative importance should be assigned to them. However, some of the above empirical studies used other measures of decentralisation that remove Leibenstein's criticism (e.g., the distribution of compensation in the firm). We return to this point later.

scientists have been interested in another, yet related, problem.[5] Until recently, most studies restricted themselves to a framework in which the firm was viewed as a collective entrepreneurship. This entrepreneurship was conceived as operating through a central agency which had both planning and control functions. Changes in the approach to the theory of the firm directed the attention of behavioural scientists to the problem of potential conflict between the goals of the firm and those of its 'members'. To deal with this problem, two control concepts were advocated: 'control-in-the-large' and 'control-in-the-small'.[6] 'Control-in-the-large' comprises rules and procedures which concentrate on the totality of the firm and introduce greater measures of decentralisation whereas 'control-in-the-small' deals with various segments of the firm and lays down detailed standards of performance.

Similarly, accountants have been concerned with developing their control models to contribute to the literature on decentralisation. Lowe [13, p. 10] points out that one of the main developments in accounting control models is 'using transfer prices to construct internal quasi-markets and hence quasi-decentralised control'.

Despite the work of the behaviouralists in economics, few empirical studies have been concerned with the internal organisational structures of firms. Hence, the starting point and terminology for our analysis derives more from the toolbox of the accountant and behavioural scientist than that of the economist.

3. Decentralisation and divisionalisation

The classical definition of centralisation and decentralisation is that proposed by Simon [21, p. 1]:

> An administrative organisation is centralised to the extent that decisions are made at relatively high levels in the organisation; decentralised to the extent that discretion and authority to make important decisions are delegated by top management to lower levels of executive authority.

Within this approach, decentralised structures may be either 'functional' or 'federal'. 'Functional' decentralisation refers to the division of the activities of the firm into a number of functions based on specialisation. 'Federal' decentralisation involves the establishment of a group of quasi-autonomous entities whose activities are coordinated primarily through the price mechanism in order to achieve the overall objective of the organisation. 'Federal' decentralisation is synonymous with what March and Simon [14, p. 201] call 'decentralised decision-making through prices'; this type of decentralisation is our main concern here and following the accountancy literature we refer to it as 'divisionalisation' in what follows.

Various advantages are claimed for divisionalised organisational structures:

1. *Cost savings*: Divisionalisation may achieve cost savings in two primary ways:
   (i) Economies of *information transmission*. A substantial part of decision-making information originates at lower managerial levels. If divisionalisation is adopted, communication channels to higher levels need not be overloaded by information relevant only to decisions made at lower levels.[7]
   (ii) Economies in costs of *decision-making*: Because of the lower pay per hour of divisional managers relative to central managers, there is *prima facie* reason for supposing that the cost of decisions will be lower when 'lower' managers take decisions.
2. *More efficient decision-making*: Under divisionalised structures, more decisions will be made 'on the spot' and closer to the scene of operations. It is possible that 'better' decisions may result.
3. *Benefits for management*: Top managers will have more time to devote to 'more important' tasks because of the delegation of 'less important' decisions to lower managerial levels. This may indeed be similar to (ii) above.
4. *Motivation is improved*: Burlingame (4, p. 122), for example, points out that:

> A great improvement is believed to result in any firm when the creative talents of responsible individuals are encouraged to develop in a climate of individual responsibility, authority and dignity—a climate that is

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[5] For a further discussion of this literature see Marris [16].

[6] See Bonini [2]. Arrow [1] uses the terms 'operating rules' and 'enforcement rules' interchangeably with 'control-in-the-large' and 'control-in-the-small'.

[7] These economies are less likely to arise in egalitarian structures (see Simon [22, pp. 41–42]), but such structures are unlikely to exist in any practical sense.

made possible by decentralisation of decision-making.

However, a number of disadvantages are normally raised against divisionalisation which may be summarised as follows:

1. *Sub-optimal behaviour*: This danger is likely to be greatest when substantial interdependencies exist between company divisions:
    - (i) If the global objective function of the organisation is indivisible into sub-objective functions without introducing excessive externalities.
    - (ii) If organisational resources are complementary; divisionalisation here is likely to cause increase in costs.
    - (iii) If production functions of sub-operations are inter-dependent.
2. *Managerial problems*: For example, under divisionalisation there could be a shortage of qualified managers to run company divisions.[8]

4. A theoretical framework for the net benefits of divisionalisation

The above listing of advantages and disadvantages does little to help us evaluate the benefits or costs of divisionalisation. This, it seems, is a typical position in organisation theory: each case must be examined on its merits, and the general theory is derived from a series of case studies, many of which are undertaken in the same few large organisations (e.g., General Motors and General Electric).

Leibenstein [11, p. 256] challenges, for a start, the need for a model that can be used to assess the benefits of decentralisation for the organisation *as a whole*:

> One of the 'big questions' often discussed in textbooks on administration is that of centralisation versus decentralisation. The preceding sections suggest that the big problem is really the determination of the optimum role structure for the organisation. Once we have solved that, centralisation versus decentralisation is no longer an overall organisational problem.

Leibenstein justifies the above argument by maintaining that the distribution of the fields of action among various roles in the organisation implies a distribution of authority within the organisation.[9] From a practical standpoint, the above argument does not appear entirely relevant. Evidence from empirical studies suggests that many firms had to decide, at certain stages of their development, whether to adopt, in general, centralised structures or divisionalised structures.[10]

We therefore argue that it is useful to have a normative theoretical model that can guide scholars, as well as firms in practice, in assessing the net benefits of divisionalised structures. Organisation theory does not provide such a normative model; instead, only a few attempts to provide partial answers to this problem can be found in the literature.[11] We attempt to present below a normative model in relation to one characteristic of the organisational structure, viz., the extent of divisionalisation.

We need a set of assumptions for our model. We assume that the 'benefits' and the 'costs' of alternative organisational structures are quantifiable in the sense that their probability distributions are known. Secondly, we assume that the firm is a 'going-concern', i.e., the relevant time horizon for the firm is very long. Thirdly, we assume that the central management is interested in maximising the utility of the owners of the firm by selecting the optimum organisational structure.[12]

According to these assumptions, the central management will select the organisational structure (in this context the degree of divisionalisation or non-divisionalisation) with the highest net benefits discounted over the relevant time horizon. Given rationality, the shape of the function relating net benefits (total benefits less total costs) to the degree of divisionalisation will affect the choice of structure. What can we say about this hypothetical shape of the net benefit function? For particular firms (e.g., those with great inter-divisional dependencies) the possibility of success may be greater if there is centralised control in relation to almost all their activities. In such cases divisionalised structures, no matter how much or how little discretion is given to the divisions, are

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[8] Penrose [19] points out that there is no evidence for such alleged shortage.

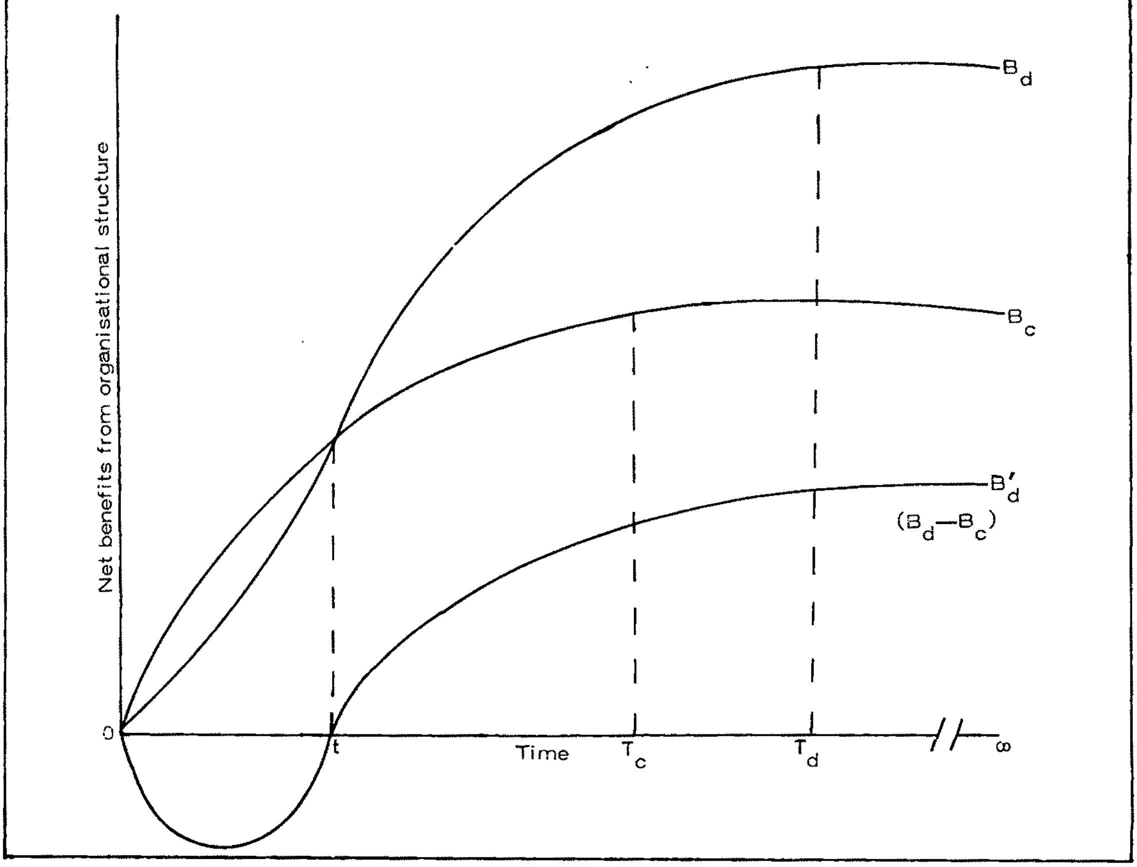
[9] See Leibenstein [11, Chapter 15].

[10] See for example Chandler [5].

[11] See for example Marschak [17].

[12] This assumption implies that the goal index of the central management is identical with, or at least a good approximation of, the goal index of the firm's owners. For a more detailed analysis of this problem see Simon [23].

Diagram 1



likely to reduce efficiency. However, for some other firms, the chances of 'success' are greatest with as near complete divisionalisation as possible. Clearly, other firms fall in between the above two extremes.

Let us assume that, for the cases we are examining, the level of divisionalisation is such that it is more advantageous over the long run than *no* divisionalisation. Even here, one would normally expect that during the early years of the existence of the organisation the time profile of the net benefits of the organisation is likely to be higher with centralisation than with divisionalisation.[13] This situation is illustrated in Diagram 1 where B_d represents net benefits with divisionalisation, B_c represents net benefits with centralisation, and B'_d represents $(B_d - B_c)$. The shapes of B_d and B_c allow, implicitly, for two important points:

1. A transitional period, T_d, is needed before the maximum benefits from the divisionalised structure can be attained. A similar period is required for the centralised structure, T_c but in general $T_d > T_c$.
2. For the first part of the transitional period, until period t, the centralised structure will tend to perform better than the divisionalised structure. The diagram shows the situation for a new company considering the adoption of either structure for the first time.

Clearly for existing companies that have already been using centralised structures the transitional loss will be greater since B_c could already be at its hypothetical maximum, i.e., the company is operating beyond T_c. The period of time represented by OT_d is likely to differ from one company to another and, indeed, for some companies OT_d may be zero, i.e., once introduced, divisionalisation is assumed to outperform centralisation *all* the time.[14]

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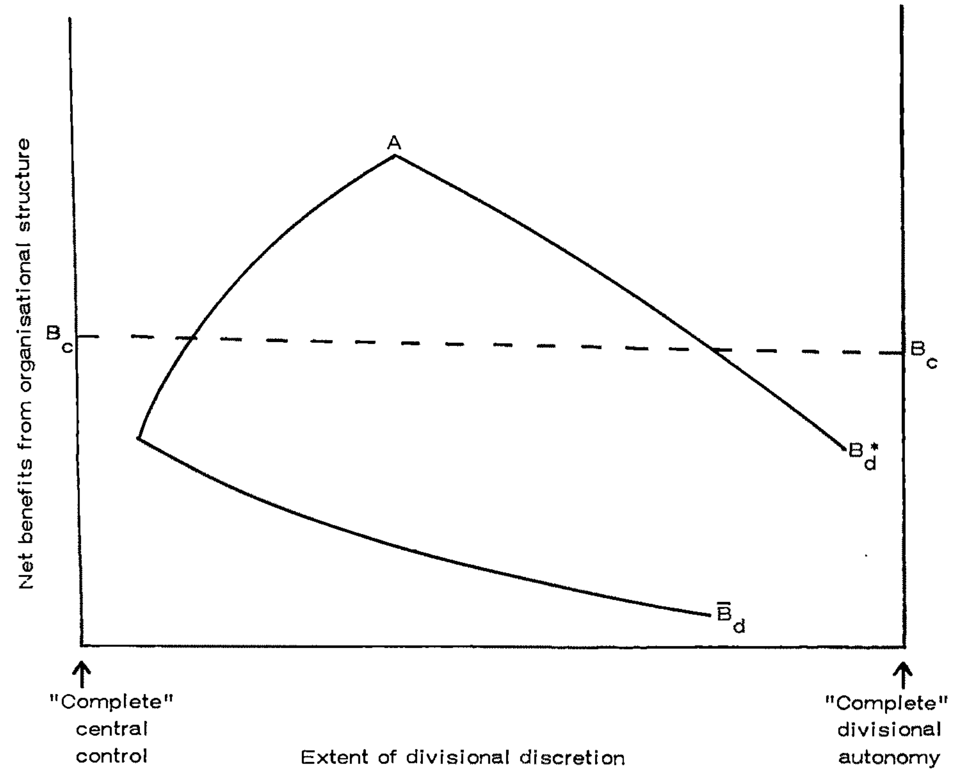
[13] Consider the cost of introducing the new system, e.g., recruiting capable divisional managers, familiarising employees with the system, etc.

[14] The shapes of B_d and B_c above may be oversimplified. The marginal rate of change of each curve could change more frequently over time. It is also possible that the two curves may intersect more than once owing to changes in some company characteristics. However, this does not alter our basic argument.

Diagram 2



When considering the curve of the net benefits from divisionalisation, B_d, the above model treated it as a function of time while the extent of divisionalisation (greater/smaller discretion) was taken as given. Now we consider the shape of B_d as a function of the extent of divisionalisation, given the long-run optimal position has been reached.

In Diagram 2 we show as B_d^* the most likely shape describing the impact of varying degrees of divisional autonomy on the net benefits of the organisational structure for a divisionalised company. It is reasonable to suppose that with a formal divisionalised structure almost complete central control would imply high costs. At the other extreme complete delegation would cause sub-optimal results for the company as a whole. We expect the position of B_d^* to vary from company to company and more particularly from one type of company to another, i.e., even if for all companies the B_d^* function is unimodal, the whole function could be shifted in a horizontal or vertical direction, but this does not affect the argument that follows.[15] This we presume is part of the reason for the differences found between different types of companies with respect to the extent of divisional autonomy.

Some companies may choose a degree of divisional autonomy close to the maximum point A of B_d^*, i.e., the long-run optimal degree of discretion at which the net benefits to the company of the organisational structure are at maximum. Other companies may misjudge the situation, so that although such divisionalisation *could* be a success it is not so successful in practice. Similar arguments could be applied to an extension of divisionalisation. Consider for example a company that moved along the B_d^* curve. If its position is before point A we might expect greater improvements from increased autonomy. Similarly, beyond A we would expect that any further extension of divisionalisation would cause a deterioration in the company's performance relative to its performance at A.

The above structure has two implications for our application. First, even if the *ceteris paribus* analysis holds, we may still find some companies performing worse after divisionalisation than before, either because they have chosen a sub-optimal degree of divisional autonomy, or because we are observing a transitional state.

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[15] For particular companies, it is even possible that the slope of B_d is never positive, as $\bar{B}_d$, i.e., increasing autonomy, always reduces efficiency.

Second, we would expect to find some relationship between the degree of divisional autonomy granted and the 'success' of the company. This relationship is likely to vary between different classes of company (e.g., by type of product, by extent of internal transactions, etc.) and it is likely to be non-linear. If all the companies in a particular group (however defined) were beyond (or before) point A, then we would observe an increasing probability of 'success' with decreasing (increasing) divisional autonomy. Otherwise, we might find a higher probability of 'success' for 'middle' companies.

The above normative framework is an *ex ante* model. Like all *ex ante* models our model faces difficult, perhaps insoluble, measurement problems. An *ex post* model is needed to provide an insight into the advantages, or otherwise, of divisionalised structures to companies which have already adopted such structures. We have utilised two alternative approaches: we used the results of a mail questionnaire to a sample of large companies to (a) derive a measure of decentralisation and (b) find out what central managers considered were the benefits/costs of divisionalisation. We linked these two sets of information to externally derived data on share prices, as an *ex post* measure of success of the company.

As our framework of analysis partly depends on the structure of the survey we made, we proceed by first considering the questionnaire.

5. The questionnaire

A questionnaire was distributed in January 1974 (at the time of the three-day working week) to the company secretaries of a sample of 300 large UK companies. There was a 43% response rate, i.e., 129 replies; the completed replies were subjected to the usual tests for randomness compared with the total sample. In only one respect did the respondents appear to have substantially different characteristics to those of the whole sample: there was a lower response rate from companies which had very high and very low rates of return on capital.

A copy of the principal part of the questionnaire is contained in Appendix 1, where some characteristics of the replies are also shown.

With one question (9), we attempted to obtain information to permit us to rank the respondents in terms of the extent of divisional autonomy granted to divisional managers. In this question, we asked with respect to each area of potential autonomy whether the degree of discretion granted to divisions was: (a) none, (b) limited, (c) substantial, or (d) full. Each of these areas of potential discretion could be treated independently and an analysis of the relationship between the autonomy granted in that area and other aspects of a company's performance could be analysed. It is also possible to analyse the relationship between the autonomy granted in one area and that in another area. However, following the argument in the previous section, we needed to have an overall scale measure of discretion or autonomy granted by a company to its divisions. How can such a measure be constructed? One way would be simply to sum all the replies to each of (a), (b), (c) and (d) and scale companies according to the number of answers given to each of (a), (b), (c) and (d).

This approach involves two problems. First, the ranking of the companies may be heavily dependent on the precise nature of the questionnaire. For example, we could have asked several questions instead of one question in many of our 'areas'.

A second problem is how one covers a situation in which we find, for example, one company that has more scores in both (a) *and* (d). To cover this situation we need a scoring method to 'add up' (a), (b), (c) and (d).

The analysis of the first problem is the subject of a forthcoming paper by the current authors; our approach there involves the use of factor analysis, and scaling methods. It appears that in practice this is not a crucial problem. The scoring method is of more direct relevance here and we discuss this in more detail.

We adopted Likert's scoring method for calculating the score of each of our respondents in connection with its attitude towards divisional discretion. Likert's [12] simple scoring method involves the assigning of consecutive numerical values to the different degrees of attitude in connection with a certain opinion issue. There were several reasons for choosing this method rather than other scoring methods.

First, it avoids the need to make a series of *ad hoc* judgements of the kind implied by some other methods, such as the Thurstone scoring method—which is based on a group of judges assigning scores to each degree of attitude. Second, Edwards and Kenney [6] have shown that Likert's simple scoring method yields higher reliability coefficients with fewer items than Thurstone's method. Third, Likert's method is less time consuming and less laborious than Thurstone's method. Fourth, Likert has shown that his simple scoring method yields essentially the same reliability coefficient as the sigma method and correlates closely with it ($r = +0{\cdot}99$).

Likert's simple scoring method typically classifies an attitude towards a certain opinion issue into five categories; strongly agree, agree, undecided, disagree, and strongly disagree. The score ranges from 1 to 5 with 5 being assigned to the end which expresses a favourable attitude, such that the higher the score the more favourable the attitude would be. However, we have departed slightly from Likert's five categories. In specifying attitude categories with respect to divisional managers' discretion, only four categories were used: full, substantial, limited and none. The 'undecided' category is missing in our scaling because it is difficult to make sense for any description of this category so that respondents could reasonably reply. Consequently, our attitude categories were assigned the following numerical values:[16] full (4), substantial (3), limited (2) and none (1).

It is the mean score for each question that is shown in the final column of question 9 in the Appendix—the mean score ranges from 1·1 in respect of the question relating to the power of divisions to raise external loans, to 3·4 in respect of that relating to the determination of the technical characteristics of products. For individual companies the aggregate score ranged from 29 to 67, i.e., the mean score across companies ranged from 1·5 to 3·5, with the higher score denoting a higher degree of divisional autonomy.

6. Direct evidence from the survey

There are several pieces of direct evidence from the questionnaire answers on the success or otherwise of divisionalisation. First there is the drift towards divisionalisation in the UK. Nearly half of the respondents who answered the question on divisionalisation year have divisionalised within the period from 1964–1973. The 10 years before that, 1954–1963, account for just over 22% of respondents to the above question. Perhaps one reason why the rate of divisionalisation in the last 10 years has been more than twice that during the earlier 10 years is the 1967 British Companies Act which requires companies to report on the contribution to their financial record (turnover, profit or losses) by their major business classes. A second reason for the increasing rate of divisionalisation in the last 10 years is the increase in acquisition of companies and the rise of conglomerates in the UK; this was in fact mentioned by many respondents. A third possible reason is that UK companies are becoming convinced by the advantages of divisionalisation. In saying this we are implicitly assuming that companies act in a rational manner. It could be that companies are convinced only by the evidence of other companies' actions: there may be a bandwagon effect. Alternatively, adopting divisionalisation may make the internal policies of the organisation simpler to manage by the central controllers, it may be a prestige symbol—and so on. We subsume all these kinds of reasons under our general statement that 'companies are becoming more convinced by the advantages of divisionalisation'.

A rather favourable view taken of divisionalisation is reflected in the replies to these questions; only one respondent considered that divisionalisation had yielded *any* deterioration in the company's financial performance. Nearly 80% indicated that there had been an improvement in the financial record as a result of divisionalisation. This kind of result is in line with those typically obtained from surveys; respondents do feel that their past activities have been correct (as indeed they probably were). Yet we may gain some further insights even if we believe the results are biased. First such possible bias may be consistent as between different respondents; there is some evidence to support this in our later analysis of the share price performance of the different companies, e.g., those that reported 'a substantial improvement' following divisionalisation tended to perform better in terms of share price changes than those who reported 'a slight improvement'. Second, we may gain information from the reported sources of these improvements. A noteworthy feature of the replies is that the reported primary impact of divisionalisation was on increasing revenues rather than reducing costs. This is contrary to the implications of much of the literature on divisionalisation, which emphasises cost saving rather than revenue increasing benefits of divisionalisation.[17]

We can also obtain a crude indication of whether companies' chances of financial 'success' as reported in the questionnaire are affected by the *extent* of their divisional discretion. Our findings in this respect indicate that companies which reported a substantial improvement in their performance have a score mean of 2·58, those which reported a slight improvement have a score mean of 2·50, and those whose financial performance remained the same have a score mean of 2·73, i.e., companies who reported relatively poorer results from divisionalisation tended to permit a greater degree of discretion to divisional managers.

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[16] We have tried a scoring for our four categories as follows: full (5), substantial (4), limited (2), none (1) and avoided the score (3) for the missing 'undecided' category in our study. However, this scoring method produced a ranking of our respondents almost identical with the ranking based on the adopted scoring method.

[17] See for example Zannetos [26, pp. B-58, B-59].

This is a tantalising result for it implies that while companies find some divisional discretion of benefit, the companies that engaged in greatest divisional autonomy tended to be less likely to report 'very successful' effects from divisionalisation.

The primary reservation one must have about this result and the other results shown above is that they are based solely on the results of the questionnaire. We attempt below to reduce the impact of this reservation by using an external measure (i.e., external to the survey data) of "success'.

7. A measure of success—the relative share price model

In attempting to measure the contribution made by divisionalised structures to the performance of a company, one of the basic problems is: how does one judge that a company has 'succeeded' in achieving its objectives without knowing those objectives? There are the difficulties of multiple objectives, the varying pressure of the different groups within an organisation, etc. From the answers to our questionnaire it seems that companies have several ideas on the nature of 'success'. It is easy to talk of 'success' in the abstract but difficult to put it in measurable terms.

There are several possible candidates in this connection—growth of net assets, turnover, earnings, share price, etc. None is entirely satisfactory. The measure we chose was the *relative* share price. If a company's relative share price rises, this is deemed a success. The relative share price is used as an attempt to take out the effects that are extraneous to the company's management policy: the standardisation factor is not easily chosen. We have calculated an 'industry' index based on a selection of companies and then analysed each company's performance relative to this 'industry' index.[18]

But why use share prices at all? We have adopted share prices as an overall approximation of company performance for the following two reasons. First, share prices seem to provide a more generalised index of company performance than other indices since they reflect retrospective performance of a company and its future potentialities as evaluated in the market place. Second, it sounds reasonable to assume that—in practice—company managers, shareholders, and potential investors are more interested in the patterns of behaviour of share prices than in other short-run indices.

In our analysis we used a two equation structural form:

$$\Delta\pi_j = f_1(\Delta X_j, \Delta Z_j) \qquad (1)$$

$$\Delta_{SP_j} = f_2(\Delta\pi_j, \Delta\mu_j) \qquad (2)$$

where

π_j = the profit of company j,
X_j = the variables affecting profits other than the organisational structure of company j,
Z_j = the organisational structure of company j,
SP_j = the share price of company j,
μ_j = the variables other than profits that affect the share price of company j.

Hence, we have a reduced form[19] in which

$$\Delta SP_j = f_3(\Delta X_j, \Delta\mu_j, \Delta Z_j). \qquad (3)$$

We propose removing some of the effects of the X_j and the μ_j from the share price by considering the relative share price. But there will still remain many other extraneous factors. Ideally we should construct a complete model to explain the share prices, but this in itself is an enormous task. A cruder approach, and one we adopt, is to examine a model of the form:

$$\Delta RSP_j = f_4(\Delta Z_j, \epsilon_j) \qquad (4)\cdot$$

where:

RSP_j = the relative share price of company j,
ϵ_j = some random element

and the functional form, f, may depend on some specific characteristics of the company, e.g., the extent of external markets for all its intermediate products.

One problem with using share prices as a performance index is to decide which share prices are to be used; the highest share prices, the lowest share prices, or the average share prices of any company for a certain period. We selected a random sample of our respondents and calculated various 'share prices' in an attempt to find out a satisfactory version to apply to the whole sample.

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[18] The usefulness of this approach in part depends on the contribution to each share price by industry, and other factors. Recent evidence suggests that the market rather than the industry factor is more important—see Brown and Ball [3]. But the industry index includes the market factor and so we use it bearing in mind that it is only a rough guide.

[19] It could be that share prices react directly to changes in the organisational structure, for some investors may believe that these changes will be beneficial to them if undertaken in a particular way, but this does not alter our basic argument.

For various reasons we settled on the relative average share price (*RASP* hereafter) of companies in each year. Since share prices are typically subject to wide fluctuations in the short-run, obtaining a 'reliable' average of these prices seems to be the main concern of many writers in the areas of growth, dividend, and investment policy; see for example Fisher [7], Gordon [9] and Friend and Puckett [8]. Marris and Singh [15] have demonstrated for a sample of companies similar to that used here that the arithmetic mean of the firm's highest and lowest share prices during the year, as reported in Moodies Services, is a good estimate of its *ASP* for the year. It was found that the average absolute error of this measure seldom exceeds 5%. Marris and Singh reported also that the range of the error was found to be small in most of the companies considered in their study.

We therefore decided to use the arithmetic average of the highest and lowest share prices in every year—as reported in *Moodies Handbook* [18]—as an approximation of *ASP* for each of our respondents. We collected the yearly highest and lowest share prices for a period of 18 years extending from 1955 to 1972 for as many of our respondents as possible. This seems long enough a period for our purposes. Starting in 1955 avoids many of the distortions in share prices arising from extraneous events of the early postwar period and the aberrations of the international financial scene in the early 1950s. Of the 129 respondents, 107 were quoted[20] on the London Stock Exchange, but *ASP* were readily available for the whole of the 18 years period for only 57 of them. For the remaining 50 respondents, *ASP* were obtained for a number of years ranging from 3 to 16 years. Furthermore, of these 107 respondents, 16 did not specify the year in which they introduced divisionalised structures for the first time, 23 were divisionalised earlier than 1955, and 2 divisionalised in 1955. Also, 15 more respondents for whom *ASP* were available only some time after 1955 introduced divisionalised structures either before their *ASP* were available or in the same year. Therefore, for 56 respondents in all, the pattern of their *ASP* behaviour before divisionalisation is missing in our analysis.

An index for each industrial group was established by selecting a sample of companies. The number of companies selected to construct the index of each industry is dependent on the number of quoted companies in *Moodies Handbook* for that industry. Since we are unable to differentiate between divisionalised and non-divisionalised companies from the information available in *Moodies Handbook* and other relevant sources, we selected the sample constituting the index of each industry on a random basis. Hence, we do not know how many of these companies are divisionalised and how many are not. The yearly highest and lowest share prices were taken for all companies in each industrial index over the whole period of 18 years (1955–1972) except when share prices were not available for some of this period for all our respondents in any industrial classification, e.g., merchant banks.

Writing $ASP = (H + L)/2$ where H is highest and L is lowest share price observed, the relative behaviour of ASP for each of our j respondents for each period, t, was established as follows:

$$RASP_{jt} = \left(\frac{ASP_{jt}}{\sum_{I=1}^{n} (ASP_{It} \times SN_I)} \times 100 \right) \Bigg/ \left(\frac{ASP_{j,1972}}{\sum_{I=1}^{n} (ASP_{I,1972} \times SN_I)} \right) \qquad (5)$$

where SN_I denotes number of shares (weight) for any company $I = 1, 2, \ldots n$ in the industry index at the end of 1972. Relative ASP_js all have 1972 as a base year.[21] This measure is a crude one: firms may be subject to various influences, and the variations from the industry effect may not be the dominant one, etc.

Distortions in the ASP_js of individual companies due to the environmental variables of each industry are assumed to be offsetting since each ASP_j is taken relative to $\Sigma_{I=1}^{n} ASP_I \times SN_I$. We also assume that distortions in the values of the ASP_js owing to the general economic environment would be largely offsetting since any company would, typically, be subject to such general effects, though not necessarily to the same extent.

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[20] The remaining 22 companies were either private companies or quoted outside the UK (mainly in USA and South Africa).

[21] We used 1972 as a base year rather than 1955 because of the incomplete availability of share prices as far back as 1955 for some of our respondents.

Table 1

Behaviour of Relative Share Prices Before Divisionalisation

Behaviour of RASP *before Adopting Divisionalisation, or Introducing more Discretion*	*Adopting Divisionalisation*		*Introducing Greater Discretion*	
	Number	*%*	*Number*	*%*
1. Improvement	19	37	10	28
2. Decline	23	45	16	44
3. Fluctuations	4	8	7	20
4. Broadly the same	5	10	3	8
Total	51	100	36	100

We considered only observations at the time of the change in the organisational structure, and so for most companies we have only one observation although we have information on the timing of further extensions or contractions of the extent of divisionalisation, the only form of organisational change we are concerned with here. Normally, if all companies in one industry engage in the same kind of organisational change at the same time we would not be able to distinguish the effect of this organisational change in the relative share price. In our sample this is not the case.

What we have done, in broad terms, is to consider the relative share price before and after the organisational change, and on the basis of its behaviour decide whether it was improving, declining, staying constant or fluctuating before the organisational change, and similarly for after the change. Hence, for each company we have the information that at the time of divisionalisation the relative share price behaviour was $-+$, $=+$, $\xi+$, $++$, $-\xi$, $-=$, $+\xi$, $+=$, $\xi-$, $=-$, $--$, $\xi\xi$, $\xi=$, $==$, $+-$, where $-$ means declining, $+$ improving, $=$ the same, ξ fluctuating, and where each end of this vector represents the extreme 'good' or 'bad' changes in the behaviour of the company.[22]

8. Results from share price data

We have undertaken various unidimensional analyses of the share price model data in an attempt to provide some answers to the questions raised in the introduction. First, we attempted to find out if there was a particular pattern for the behaviour of companies' *RASP* immediately before adopting divisionalised structures and before introducing greater measures of discretion. A summary of the findings for the relevant companies is shown above in Table 1.

The above findings show that there is no discernible pattern in the behaviour of *RASP* of companies either before adopting divisionalised structures or before introducing more discretion. It appears, therefore, that the decision to divisionalise does not seem to be correlated with the recent performance of a company.[23]

We then attempted to investigate the effects the adoption of divisionalised structures had on company performance, i.e., the pattern of the behaviour of *RASP after* divisionalisation had been introduced. The same analysis was undertaken to study the effects of extending divisionalisation, i.e., introducing greater discretion, on the behaviour of *RASP*. The findings, for the relevant number of companies in each case, appear in Table 2. Notice that the overall *RASP* for all companies in an industry cannot either improve or deteriorate: it is a *relative* measure. In the short term it can improve/deteriorate. But consider a situation in which *all* companies in an industry have divisionalised in the same year. By the definition of *RASP* some companies must do better and some others must do worse. The validity of the analysis depends on the coincidence of such divisionalisation as occurs.

One might expect that if divisionalisation had no effect on the performance of companies an equal number would improve and deteriorate.[24]

Given a set of reasonable assumptions (e.g., independence of observations) and ignoring the two companies that remained broadly the same,

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[22] Note that our definition of success is a very short-run one: it is restricted to the notion of a once-and-for-all improvement in the share price. It could be that the *trend* of the company's share price would also be affected, although this may be taken care of by the market in its reassessment of the company's future potentialities after divisionalisation.

[23] Many of our respondents pointed out that companies in practice may divisionalise because they believe they have reached a size beyond which they cannot operate efficiently under a centralised structure, i.e., the size argument we referred to earlier.

[24] This is not strictly true for while $\Sigma_j\Sigma_T\mathrm{RASP}_{jt} \equiv 0$, it does not follow that there will be an equal number of 'progressions' and 'declines' in the sense we have defined them, but for our purpose this seems a fair approximation.

Table 2
Behaviour of Relative Share Prices after Divisionalisation

Behaviour of RASP *after Adopting Divisionalisation, or Introducing more Autonomy*	*Adopting Divisionalisation*		*Introducing Greater Discretion*	
	Number	%	*Number*	%
1. Improvement	42	70	19	64
2. Decline	16	27	10	33
3. Broadly the same	2	3	1	3
Total	60	100	30	100

more than 37 companies showing progress would arise by accident only one time in 20 for large samples. However, the difference between 'success' and 'failure' following extended autonomy being granted to divisions was not quite significant at the 5% level.

One of the limitations of the above analysis is that it does not show whether the results arise because companies that are about to succeed and expand adopt divisionalised structures in advance of that 'success' or whether divisionalised structures contribute to the 'success' of divisionalised companies. Although we find the latter a much more convincing explanation we made further analysis of the data to see whether this could provide further evidence in this connection.

One approach to the resolution of the above dilemma is to make a cross-section analysis of the behaviour of *RASP* before and after adopting divisionalisation by respondents. The findings are reported in Table 3.

A 5% confidence interval applied to the set of results relating to the 23 'deteriorating' companies indicate that approximately 16 cases showing progress would arise by accident only one time in 20. In this sense the observed improvement in 18 cases is statistically significant. However, for those companies which divisionalised following a period of improvement in their *RASP*, the contribution of divisionalisation to the behaviour of *RASP* does not seem as pronounced as in the above case. This may cast some doubts on the generality of the above findings. Nevertheless, one ought to remember that due to the nature of our data, we would expect some declines.[25]

A similar analysis to study the effects of an extension of divisionalisation on *RASP* was undertaken. The sample size was small and therefore it was difficult to make sensible statistical tests—see Table 4.

But here again the apparent contribution of expanded divisionalisation (more autonomy) is most noticeable in the case of companies that had suffered a relative decline in their *RASP* before the extension of autonomy.

In summary, the unidimensional analysis of the data revealed:

(a) Immediately before divisionalisation, there was no discernible pattern in share price changes.

(b) After divisionalisation, a significant number of companies that had been declining in terms of their share price showed a noticeable improvement. There was no discernible impact on companies that had previously been doing well.

Table 3
Behaviour of Relative Share Prices before and after Divisionalisation

RASP *Behaviour before Divisionalisation*		RASP *Behaviour after Divisionalisation*					
		Improved		*Declined*		*The Same*	
	Total	*Absolute*	%	*Absolute*	%	*Absolute*	%
1. Improvement	17	9	53	8	47		
2. Decline	23	18	78	4	17	1	5
3. Fluctuations	4	3	75	1	25		
4. Broadly the same	5	3	60	2	40		
Total	49	33		15		1	

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[25] Notice that for our data $\Sigma_j \Sigma_t \text{RASP}_{jt} \equiv 0$ if *all* companies in an industry are divisionalised.

Table 4
Behaviour of Relative Share Prices before and after Introducing more Autonomy

Behaviour of RASP *before more Autonomy*	*Behaviour of* RASP *after more Autonomy* *Improved* *Absolute*	%	*Declined* *Absolute*	%	*The Same* *Absolute*	%
1. Improvement	5	63	3	37		
2. Decline	11	73	3	20	1	7
3. Fluctuations	1	25	3	75		
4. Broadly the same	2	67	1	33		
Total	19		10		1	

How are these outcomes related to the extent of discretion granted to divisional managers? To consider this problem we made use of only the most recent change in the extent of divisional discretion as reported by the companies.

In order to provide appropriate data for analysis we have assessed on a numerical scale the probability that, on the basis of the variations in share prices we found, the company experienced an improvement in its performance at the time of divisionalisation. Alternative numeric and non-numeric scales were tried, and all yielded broadly the same results. The way this scale was derived is shown in Table 5 below.

The above table shows a numerical value we assigned to changes in the *RASP* before and after divisionalisation. Hence, observing a fall in *RASP* before divisionalisation and a rise after divisionalisation we assign an *estimated* probability of 1·0 that the company witnessed 'success' after divisionalisation. Similarly, (+ −) may be interpreted as indicating that the *estimated* probability is zero for 'success' to take place as a result of the most recent change.

Table 5
A Numeric Scale of the Probability of Success

Movements of Share Price before and after Divisionalisation	*Assumed Probability that* RASP *'Improved'*
− +	1·0
= +	0·9
ξ +	0·9
− =	0·8
− ξ	0·8
? +	0·8
+ +	0·7
ξ ξ	0·5
ξ =	0·5
= =	0·5
− −	0·3
? −	0·2
+ =	0·2
+ ξ	0·2
ξ −	0·1
= −	0·1
+ −	0

We have in total 61 pairs of observations of estimated probability of success (P) and the Likert autonomy score (A).[26] We grouped the information into four quartiles and for each quartile calculated the mean of the estimated probability of success (P) and of the autonomy score (A); this is shown in Table 6. It is interesting to observe that for this total grouping the estimated probability of success (P) *rises* as the autonomy score falls. *Prima facie* this suggests that our sample companies are operating beyond point A in Diagram 2, i.e., the higher levels of divisional discretion granted appear to yield lower probabilities of 'success'.[27]

But in our previous discussion we referred to the possibility that the relationship between the probability of success and the extent of divisional autonomy may be different depending on the nature of the company.

Hence, we have undertaken two breakdowns of the data: (a) by the extent of the presence of an outside market for divisional products, and (b) by type of industry.

In principle we would expect companies in which for the products of all their divisions there is an outside (as well as possibly an inside) market to find it less necessary to have close central control over their divisions' activities. Naturally the mere existence of an outside market does not necessarily solve all the crucial transfer price decisions. What is clear is that without an outside yardstick, greater central control is likely to be necessary to ensure that divisions act in the interests of the company as a whole. Hence when com-

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[26] We did not include in the analysis five companies that have not provided answers to all our 19 discretion items.

[27] This is also consistent with the direct results from the questionnaire noted in Section 6 above.

Table 6
The Extent of Divisional Autonomy and the Probability of Success

	Outside Market						Industrial Groups					
	Total (61 *comp*)		*All Products* (43 *comp*)		*Some Products* (18 *comp*)		*Capital Goods* (22 *comp*)		*Consumer Goods* (19 *comp*)		*Miscellaneous* (20 *comp*)	
	A	P	A	P	A	P	A	P	A	P	A	P
First quartile	60	0·43	61	0·39	56	0·34	57	0·31	61	0·70	59	0·30
Second quartile	52	0·56	53	0·57	48	0·50	51	0·48	54	0·80	53	0·48
Third quartile	48	0·68	49	0·85	44	0·75	45	0·78	49	0·80	48	0·58
Fourth quartile	39	0·87	41	0·77	34	0·93	36	0·96	42	0·70	37	0·78
Total	50	0·63	51	0·64	46	0·61	48	0·61	52	0·75	49	0·54

paring different companies some of whom have an outside market for *all* their products and some of whom have an outside market for only *some* of their products, we would expect the latter companies to have a lower autonomy score for any given probability of success. The results derived from our analysis are shown in Table 6, and illustrated in Diagram 3.

On average there is little difference in the probability of success for different outside market arrangements. What is noticeable is the generally higher autonomy score associated with any given level of success for the companies with an outside market for *all* their products.[28] The diagram shows a steeper (negative) relationship between 'success' and autonomy score for companies with outside markets for only *some* of their products. For these companies it is more apparent that many are operating with too high a degree of divisional autonomy given that the aim of the company can be expressed in our terms.

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[28] We have here ignored the possibility that the extent to which there is an outside market is an exogenous variable so far as the company is concerned. If it is a choice variable, then other implications on the relative advantages of one market structure or the other for intermediate products exist.

Diagram 3

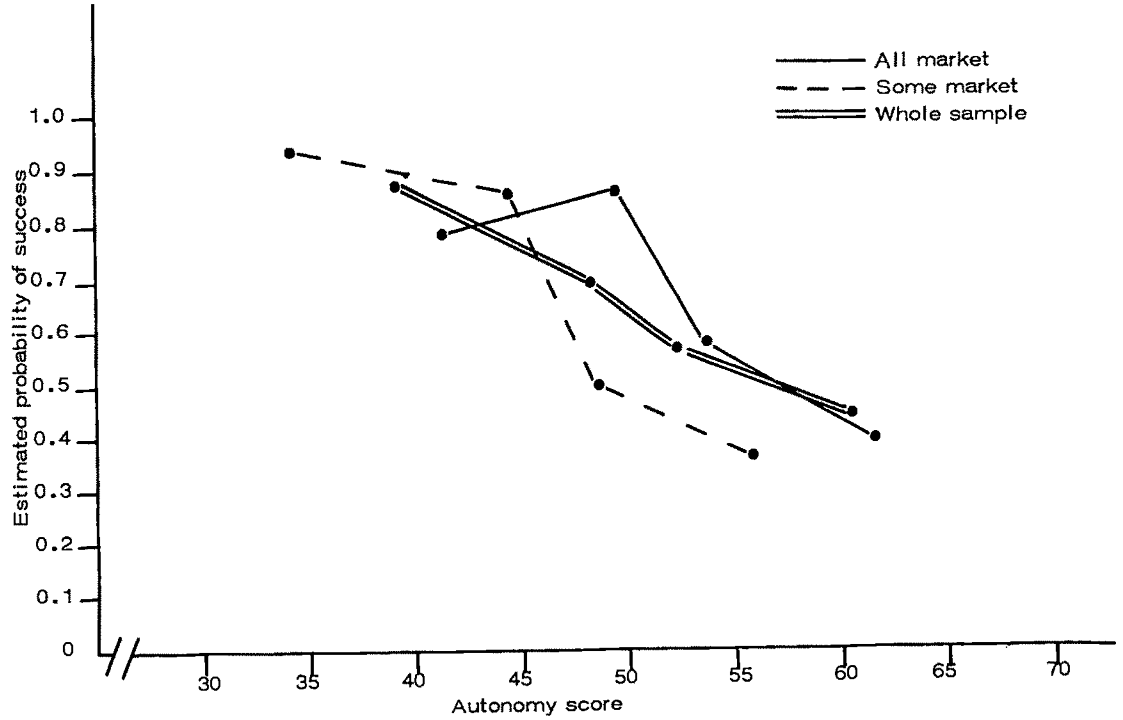
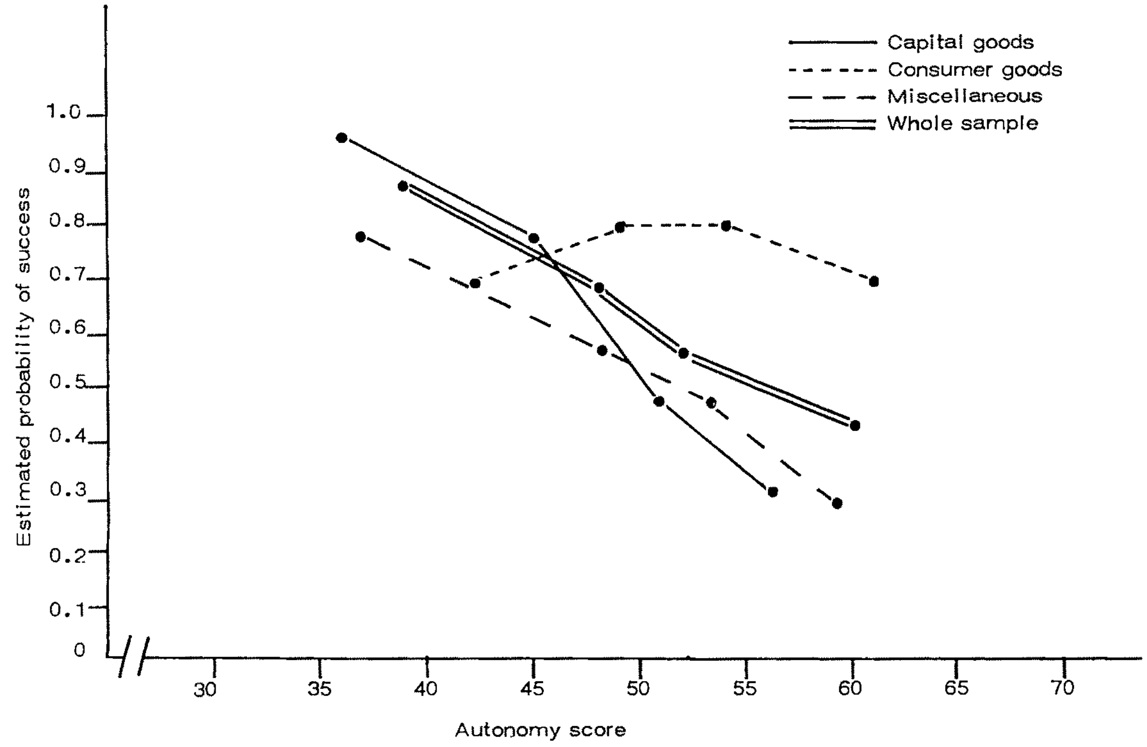


Diagram 4



The results could be interpreted as suggesting that for companies with an outside market for *all* their products the 'optimal' level of divisional autonomy is that represented by a score in the range 40–50 while for *other* companies the 'optimal' score is below 40.

Our prior belief in respect of different industries is less clear cut. On balance one would expect companies producing capital goods, often large single items, to require greater central control than consumer goods' producers. The results do reflect this distinction with 'miscellaneous' groups lying in between the two extremes of capital and consumer producers,[29] as is clear in Table 6 and Diagram 4.

9. Conclusions

One purpose of the paper has been to describe and illustrate the *possibilities* of the approach we have adopted. We find the results encouraging; the plausibility of the results is far greater than we would have suspected before our study.

We are aware of the many limitations of the analysis described above. Criticisms may be made of the different pieces of evidence, yet in so far as these pieces are consistent with one another, the strength of criticism is that much less. One particular variable we have used, the share price variation, does warrant some further comment.

The use of the share price model to provide a measure of success is sensible if one believes in the evidence for the efficient market hypothesis. This hypothesis suggests that a share price does reflect the net present value arising from the future profit stream and that variations in expectations about the future will be reflected instantaneously in the share price.

The market may react to organisational changes either because, learning of these changes, individuals revise their expectations of the future or because these changes yield short run variations in profits. Given that our probabilities are based on *at least* two years' data after the organisational change, the share price reaction could arise from either of these two sources. However, unless the market does predict the relative prospects of companies well, it is *possible* that in comparing the results of different companies we may be concentrating too much on short run changes: this would then tend to show results that were biased in favour of 'mild' divisionalisation. To this extent our results should be treated with reserve.

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[29] This does not arise because of the different market structure for intermediate goods. An analysis of the market structures for companies in different industries revealed little difference in the relevant proportions in each industry

What of the implications of the 'factual' conclusions? In our view the most tantalising result is the finding that so far as short run share price movements are concerned, some UK companies appear to engage in excessive delegation even though some divisionalisation is in general better than no divisionalisation at all. All kinds of possible explanations for this 'fact' can be constructed: managerial mistakes, concern for the long run, imperfections in the share price markets, multiple goal oriented companies, etc.

Whether or not these results are generalisable to other countries is one possible extension of this study. Another would be an examination of how far after three further years of price and profit controls the behaviour of companies remains the same. We suggest our findings would if anything be reinforced by these experiences. There is much more to be done in this area if we are to gain a further knowledge of the relative advantages of different organisational structures. We have offered but one approach that appears to bear fruit.

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Appendix 1. The Questionnaire

1. Please specify the YEAR in which your company first introduced a divisionalised accounting system:
2. Please specify if there was a certain YEAR or period of YEARS in which a SUBSTANTIAL increase in divisional discretion occurred:
3. Which of the following bases are used to split off your company into divisions—please specify the number of divisions in each case:

(a) products: 57%

(b) geographical area: 26%

(c) process: 6%

(d) customer: 5%

—please specify basis if other than (a)–(d):
(6 %)

4. How many of your divisions have an OUTSIDE MARKET for:

(a) ALL their products:

(b) SOME of their products:

(c) NONE of their products:

ALL for ALL DIVISIONS 68 %
REMAINDER 32%

5. Please specify the number of:

(a) your DOMESTIC divisions: only 33 %

(b) your OVERSEAS divisions:

BOTH 63 %

6. Do you estimate that in relation to total company transactions, total INTER-DIVISIONAL TRANSFERS are—please tick:

(a) greater than 20% of turnover: 11%

(b) between 10% & 20% of turnover: 18%

(c) less than 10% of turnover: 53%

(d) negligible or zero. 18%

7. Do you use the profit performance of your divisions as ONE of the MAJOR factors in deciding on:

(a) the promotion of divisional heads? Yes 57% No 38%

(b) the determination of future viability of divisions? Yes 92% No 6%

8. Do you take account of price-level changes when preparing divisional reports for INTERNAL uses? Yes 37% No 57%

If you answered YES, please indicate how:

9. For each of the following divisional items, please indicate below the extent of autonomy granted to most divisional heads according to the following classifications:

NO:	NO DISCRETION to divisional heads as they do not handle the function, or if they do, they carry out explicit central policies.
Ltd.:	LIMITED DISCRETION to divisional heads subject to CLOSE supervision by central management which OFTEN refuses or modifies the proposed action.
Sbs.	SUBSTANTIAL DISCRETION to divisional heads subject to LOOSE supervision by central management which RARELY reverses that discretion.
FULL:	FULL DISCRETION to divisional heads WITHOUT reference to central management.

DIVISIONAL ITEMS	DEGREE OF AUTONOMY				COMMENTS
	NO	Ltd.	Sbs.	FULL	(Mean Score)
1. Determining range of products:					2·9
2. Determining technical characteristics of product:					3·4
3. Determining quantity of output:					3·3
4. Setting advertising and marketing policy:					3·1
5. Determining selling prices:					3·3
6. Determining credit terms and cash discounts:					3·1
7. Setting purchasing policy:					3·2
8. Specifying amount of capital expenditures in annual budget:					2·2
9. Choosing capital projects within capital expenditures limits:					2·6
10. Selling & leasing divisional assets:					1·9
11. Arranging EXTERNAL short-term borrowing:					1·3
12. Arranging EXTERNAL long-term loans:					1·1
13. Forecasting & interpreting economic conditions:					2·6
14. Determining remuneration policy for employees:					2·5
15. Appointing executives (except divisional heads):					2·9
16. Carrying out major organisational changes within the division:					2·4
17. Administering the divisional budget:					3·3
18. Determining methods of budgetary control:					2·4
19. Determining internal audit procedures:					2·1
	(1)	(2)	(3)	(4)	2·6

10. As a result of the introduction of a divisionalised accounting system, do you consider that the FINANCIAL RECORD of your company has—please tick:

(a) improved substantially: 49%
(b) improved slightly: 30%
(c) remained much the same: 20%
(d) deteriorated slightly: 1%
(e) deteriorated substantially: 0%

11. If the introduction of a divisionalised accounting system has resulted in a substantial change in your financial record, please specify the YEAR in which this change was first noticeable:

12. Which of the following items do you consider were significantly affected after the introduction of a divisionalised accounting system in your company—please tick:

(a) revenues:	increased	63%	decreased	1%	have not changed	36%
(b) costs:	increased	17%	decreased	45%	have not changed	35%

13. Do you consider that the degree of discretion granted to your divisional heads in relation to that granted in similar companies is:

(a) substantially smaller: 2%
(b) much the same: 72%
(c) substantially greater: 26%

14. Do you expect that the number of companies in your industry using divisionalised accounting systems in the near future will:

(a) increase rapidly: 2%
(b) increase slowly: 36%
(c) remain much the same: 59%
(d) decrease slowly: 2%
(e) decrease rapidly: 1%

15. Please write any comments you have on the benefits of divisionalised accounting systems to your company—(continue overleaf if necessary):

The Linear Aggregation Coefficient and the Multiple User Case

Ronald Ma and Eric Sowey*

Most accountants agree that a major objective of an accounting system is to provide relevant information to users of financial statements for decision making. Some also believe that different decision makers require different information. Ijiri[1] contends that it may be possible for an accounting measure w, say the amount of net wealth reported by the accountant, to be relevant to diverse information needs. Suppose a user of accounting data requires a net wealth summary measure y_1 while a second user requires y_2 for their respective information needs. Ijiri argues that they may be able to obtain reliable estimates of y_1 and y_2 respectively from the accounting measure w, provided the following functional relationships exist:

$$y_1 = f(w) \text{ and}$$
$$y_2 = g(w).$$

Ijiri has demonstrated the use of the linear aggregation coefficient ρ (mathematically the same expression as the linear correlation coefficient r in statistics) and the aggregation effectiveness coefficient ρ^2 (mathematically the same expression as the coefficient of determination r^2) in evaluating an accounting summary measure in its role of surrogate of a principal summary measure specified by a user's decision function. This paper extends the treatment by Ijiri of the one user case to a consideration of the choice of an accounting surrogate measure suitable for the needs of diverse users.

The analysis is conducted along the following lines. Consider a set of decision makers, whose information needs may be denoted by y_i ($i = 1, 2, \ldots, m$, where m is a large number). This set may be classified into a number of sub-sets, which are characterised by strong intra-group homogeneity with respect to information needs. Consider also a number of competing accounting valuation systems, say, historical cost accounting, price-level accounting, current value systems, and so on. The analysis addresses the issue of testing the output of an accounting valuation system with respect to its relevance for the information needs of different sub-sets of users. We demonstrate that the choice of a suitable accounting valuation system may be treated as an empirical issue, rather than a normative one.

Following Ijiri, the analysis focuses on the relationship between the accountant's surrogate summary measure and the principal summary measure with reference to a particular firm. The approach is consistent with recent developments in financial statement analysis,[2] and implicitly assumes that individual firm performance has concern for users of accounting information.

The one user case[3]

An accounting summary measure, for example a net wealth measure, is always a linear aggregation of quantities, q_j ($j = 1$ to n), with the weights representing prices. There is consensus on the physical asset magnitudes, but there could be disagreement on the pricing system. Let us assume that a particular user requires an aggregation measure y such that

$$y = p_1q_1 + p_2q_2 + \ldots + p_nq_n, \qquad (1)$$

which is imperfectly represented by the accountant's aggregation measure

$$w = p_1^*q_1 + p_2^*q_2 + \ldots + p_n^*q_n, \qquad (2)$$

where p_j and p_j^* belong to different systems of weights (prices), associated with q_j, employed in computing the principal aggregation y and the surrogated aggregation w respectively.

Since the user does not know the true value of y in each period t($t = 1$ to l) he relies on the use of an estimator $\hat{y}$. The problem is: if the user has no alternative source of information, can he derive a measure of $\hat{y}$ from the reported measure w that is sufficiently reliable for his purpose at a given level of confidence?

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*We wish to thank Y. Ijiri and an anonymous referee of this Journal for their helpful comments. Errors in the paper are the authors' responsibility.

[1] Y. Ijiri, *The Foundations of Accounting Measurement—A Mathematical, Economic, and Behavioral Study* (Prentice-Hall, 1967), Ch. 6.

[2] For example, see B. Lev, *Financial Statement Analysis: A New Approach* (Prentice-Hall, 1974), Parts One and Two.

[3] Ijiri, *loc. cit.*

Because the principal aggregation is linear, it may be represented by a surrogated linear aggregation.[4] This relationship between the principal and surrogate measures may be obtained from regressing y on w. Past data of the firm can be converted into a linear aggregation of quantities with weights specified by the user's decision model to provide a temporal series of y values. The w values are the corresponding aggregation measures reported by the accountant.

$$y = a + bw + e, \qquad (3)$$

where a and b are constants, e is the error of estimate, $\Sigma e = 0$ and Σe^2 is minimized.[5] It is assumed that observations on w are independent of the population error term.

Similarly as the linear correlation coefficient r is used in statistical analysis to quantify the degree of relationship between two variables, the linear aggregation coefficient ρ and the aggregation effectiveness coefficient ρ^2 can be used to quantify the degree of identifiability between the user's principal aggregation and the accountant's surrogated aggregation. ρ^2 is a measure of the proportion of the variation in y that is 'eliminated' by the use of w to derive an estimator, $\hat{y}$. The standard of reliability of $\hat{y}$ for the user's needs can be established by setting a minimum standard for ρ^2, say, $\rho^2 \geq 0{\cdot}95$. Thus Ijiri's approach provides new insights into the role of accounting numbers as inputs for a user's decision model.

Ijiri suggests that the above analysis is relevant also to the problem of accounting for price-level changes. The linear aggregation coefficient can be employed to choose the kind of general price-level adjustment and the particular price-level index for deriving adjusted historical cost data in terms of their reliability as surrogates of users' principal aggregation measures.[6]

Ijiri expects that in the future the linear aggregation coefficient will be used as extensively as the linear correlation coefficient;[7] we may, for example, 'set up a standard such as $\rho^2 \geq 0{\cdot}95$ as a minimum satisfactory level for a given use or for a given user group, and then try to design an accounting aggregation that is satisfactory for a variety of uses.'[8] This extended use of the linear aggregation coefficient is the theme of the present paper.

The multiple users case

The large number of users of financial statements can be classified into several groups (and sub-groups), for example, persons who require historical cost data, persons who require current value data, and so on. The linear aggregation coefficient analysis may be employed to support statements such as: This particular surrogate measure can be used for estimating the data requirements of persons who belong in Groups 1, 2 and 4 within specified confidence limits, and cannot be used for this purpose by persons in Groups 3 and 5. Thus the effectiveness as well as the limitations of the accountant's surrogate measure with reference to user groups are disclosed. Further, the approach provides a method for discriminating between the effectiveness of competing surrogate measures, providing there is agreement on the choice criteria, such as the number of groups whose requirements are met or the number of persons in these groups. Qualitative factors, for example, the economic implications of not meeting the data requirements of some particular group(s), may also be important.

The focus on user groups poses a number of problems, such as those of classifying a large number of users into groups characterised by internal homogeneity with respect to the variable of interest (i.e. the price vector),[9] and testing the surrogate's effectiveness against group requirements. Below we examine some of the problems. The treatment is exploratory and is not intended as a rigorous examination of available algorithms for solving these problems. The purpose is to demonstrate how Ijiri's contribution to the process of choice between competing accounting systems may be extended.

(a) *Identifying Distinctive Groups*[10]

In the set of all users, those that share similar

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[4] *Ibid*, p. 121.

[5] It should be remarked that the OLS regression technique implied here is not the only one that could be used. For example one might choose to minimise $\Sigma|e|$. However, in generalising Ijiri's ideas, we follow his basic approach.

[6] *Ibid*, p. 131.

[7] We may not share Ijiri's expectations, nonetheless his use of the linear aggregation coefficient is both innovative and constructive.

[8] *Loc. cit.*

[9] Items may also be grouped with respect to a number of variables.

[10] There are a number of possible combinations within the total users set: no distinctive group observable, or a single dominant group, or a number of distinctive groups. The first possibility is a non-problem. The analysis applies equally to a single dominant group or a number of distinctive groups. Outliers can be regarded as groups comprising single individuals.

Table 1
Pairwise Correlations between Principal Aggregation Measures of m Users

	y_1	y_2	y_3	y_4	y_5	$\cdots$	y_m
y_1		$r_{1,2}$	$r_{1,3}$	$r_{1,4}$	$r_{1,5}$	$\cdots$	$r_{1,m}$
y_2	$r_{2,1}$		$r_{2,3}$	$r_{2,4}$	$r_{2,5}$		$r_{2,m}$
y_3	$r_{3,1}$	$r_{3,2}$		$r_{3,4}$	$r_{3,5}$		$r_{3,m}$
y_4	$r_{4,1}$	$r_{4,2}$	$r_{4,3}$		$r_{4,5}$		$r_{4,m}$
y_5	$r_{5,1}$	$r_{5,2}$	$r_{5,3}$	$r_{5,4}$			$r_{5,m}$
.							.
.							.
.							.
y_m	$r_{m,1}$	$r_{m,2}$	$r_{m,3}$	$r_{m,4}$	$r_{m,5}$	$\cdots$	

information needs (for example, summary measures based on historical cost, current purchasing power, replacement cost or resale price, etc.) may form groups characterised by strong homogeneity within the group and strong heterogeneity between groups. There is thus a clustering or classification problem which must be resolved *before* the degree of reliability of the accountant's surrogated measure with respect to the needs of the participants within a particular group is tested, given the necessary information on user needs.

Assume there are m users and thus m principal aggregations:

$$\begin{aligned} y_1 &= p_{11}q_1 + p_{12}q_2 + \dots + p_{1n}q_n \\ y_2 &= p_{21}q_1 + p_{22}q_2 + \dots + p_{2n}q_n \\ &\cdot \\ &\cdot \\ &\cdot \\ y_m &= p_{m1}q_1 + p_{m2}q_2 + \dots + p_{mn}q_n, \end{aligned}$$

while the accountant's surrogated aggregation is

$$w = p_1^*q_1 + p_2^*q_2 + \dots + p_n^*q_n$$

It is evident that specification of the users' principal aggregations is a pre-requisite to classification and grouping. Critics might argue that we have little knowledge on users' information requirements at the present time. Until this becomes available it is not possible, of course, to test the effectiveness of accounting measures.

There is a large number of grouping or clustering methods available, and they will not necessarily give substantively similar results. The present writers emphasise that the selection of an appropriate grouping method is a matter of personal judgment, although the choice is constrained by the objective(s) of the analysis. In the present case the objective is to group all the members of the m users set into a hierarchy of non-overlapping subsets, with each subset characterised by strong intra-group homogeneity and each user unambiguously assigned to one subset only. It would be a pleasing result if the clusters or groups obtained were amenable to an economic interpretation, viz. in terms of historical cost based or replacement cost based accounting systems, etc.

An adaptation of McQuitty's elementary linkage analysis[11] suggests itself as a useful clustering method for the present purpose. A matrix of simple correlations, as in Table 1, is constructed, displaying pairwise correlation coefficients of the principal summary measures y_i ($i = 1, \dots, m$) of m users over time periods $t = 1, \dots, l$.

Suppose the highest correlation coefficient in Table 1 is $r_{2,3}$ ($=r_{3,2}$), and that this value is at least (say) 0·9.[12] Then y_2 and y_3 form the nucleus of the first cluster. The next step is to identify those users who are most like the members of the nucleus (y_2 and y_3), by reading across the rows in the matrix which correspond to y_2 and y_3 respectively and selecting all y_j's ($j \neq 2$ or 3) whose correlations with *both* y_2 and y_3 also satisfy the condition mentioned above, namely that these correlations are at least 0·9.

To obtain a second cluster a similar analysis is performed on a reduced correlation matrix of items formed by deleting from the matrix in Table 1 all rows and columns corresponding to items in the first complete cluster. We begin afresh by identifying the two members with the highest mutual correlation in the reduced matrix. These form the nucleus of the second cluster. In this iterative fashion, all the members of the m users

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[11] L. L. McQuitty, 'Elementary Linkage Analysis for Isolating Orthogonal and Oblique Types and Typal Relevancies', *Educational and Psychological Measurement*, Vol. 17, 1957.

[12] The reason for this numerical requirement will be explained shortly.

Table 2

Principal Aggregation Measures of Members of Cluster C_1 over Time Periods

	Principal aggregations				*Average over* k *users in* t
Time period t	y_1	y_2	$\cdots$	y_k	$\bar{y}(C_1)$
1	y_{11}	y_{21}		y_{k1}	$\bar{y}_{.1}$
2	y_{12}	y_{22}		y_{k2}	$\bar{y}_{.2}$
.	.	.		.	.
.	.	.		.	.
.	.	.		.	.
l	y_{1l}	y_{2l}		y_{kl}	$\bar{y}_{.l}$

set can be hierarchically identified and grouped into non-overlapping subsets.

More elaborate methods are available if more complex grouping criteria are to be met. For example, to ensure even stronger intra-group homogeneity the condition that the degree of association between any two members in a cluster be greater than the association either member has with any non-member can be imposed.

(b) *Evaluating Surrogate Effectiveness for Group Needs*

Assume that a cluster C_1, formed from the m users set, comprises members $y_1, y_2, \ldots, y_k$. Consider the structure of principal aggregations of these members over a number of time periods shown in Table 2.[13]

The use of an appropriate grouping method ensures strong intra-group homogeneity with respect to the variable of interest and a correspondingly high correlation between each individual y series and the vector of average values (call this $\bar{y}(C_1)$) in cluster C_1.

There are several ways of defining $\bar{y}$ in terms of the p_i's in the component series. Consider a group comprising three individual series:

$$y_1 = \sum_{j=1}^{n} p_{1j}q_j, \quad y_2 = \sum_{j=1}^{n} p_{2j}q_j$$

and

$$y_3 = \sum_{j=1}^{n} p_{3j}q_j.$$

The sample average $\bar{y}$ could be stated as a simple average:

$$\frac{1}{3}\sum_{j=1}^{n} (p_{1j}q_j + p_{2j}q_j + p_{3j}q_j),$$

i.e. $\frac{1}{3}(y_1 + y_2 + y_3)$. Alternatively $\bar{y}$ could be a weighted average:

$$\frac{v_1y_1 + v_2y_2 + v_3y_3}{v_1 + v_2 + v_3}$$

where the weights v_i could reflect the individuals' relative aggregate purchasing power. However, without prior information on the relative importance of the individual users' decision functions, the use of the simple average appears reasonable.

The degree of reliability of an accounting measure w with respect to the principal aggregation measures of members of the C_1 group may be statistically tested by reference to the value of $\rho_{w,\bar{y}(C_1)}$, and similarly the effectiveness of w with respect to members of other clusters, $C_2, C_3, \ldots$ formed from the total m users set, may be tested by reference to the value of $\rho_{w,\bar{y}(C_2)}$, $\rho_{w,\bar{y}(C_3)}$, etc.

In each case, the appropriate null hypothesis will be that the true (population) value of $\rho_{w,\bar{y}}$ is at least 0·9. Specification of this particular value is predicated on the desire to have a w that is highly correlated with *each* user's principal aggregation, y_i, and not merely with the average across users in a group.

The clustering procedure described earlier assembled a subset of y_i's each highly correlated with the corresponding $\bar{y}$. But unless that $\bar{y}$ is *sufficiently* highly correlated with w there can be no guarantee that each y_i will be at all well correlated with w. This matter, essentially the existence of a limit to the transitivity of high correlations, is explained more fully in the Appendix.

The relevant significance test on $\rho_{w,\bar{y}}$, which assumes joint normality of the w and $\bar{y}$ series, is described by Brunk.[14] Where the normality assumption does not hold, a non-parametric test can be employed to evaluate the degree of association of the surrogate measure w with all principal aggregations in the subset $(y_1, y_2, \ldots, y_k)$ simultaneously.[15]

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[13] A dot replaces any subscript over which summation is to be understood.

[14] H. D. Brunk, *An Introduction to Mathematical Statistics*, 2nd ed. (Blaisdell, 1965), p. 221.

Conclusion

In recent years there has been increasing disenchantment with the effectiveness of the accountant's role in supplying information on the performance of firms, that is information which is relevant to the needs of users of financial statements. By introducing the linear aggregation coefficient as an index of effectiveness, Ijiri's analysis evaluates the relationship between the accountant's surrogate measure and the user's principal measure. The surrogation problem is compounded where there are a variety of users and different goals to be served. The extension of Ijiri's analysis undertaken in this paper is directed specifically to the problem posed by multiple users. While the relevance of the analysis to the needs of investors who hold diversified portfolios might be questioned, Ijiri's exposition and our extension of it appear warranted in view of the continuing debate on competing accounting valuation systems.

Appendix

A limit to the transitivity of high correlations

Consider three variables, x_1, x_2, x_3 and denote their pairwise correlation coefficients by r_{12}, r_{13} and r_{23}. Then the value of $r_{13\cdot 2}$ (the partial correlation between x_1 and x_3 with x_2 held constant) is given by $(r_{13} - r_{12}r_{23})/[(1 - r_{12}^2)(1 - r_{23}^2)]^{1/2}$.

Thus:

$$r_{13} = r_{12}r_{23} + r_{13\cdot 2}[(1 - r_{12}^2)(1 - r_{23}^2)]^{1/2}$$

and it follows that, for given values of r_{12} and r_{23}, bounds are placed on the possible values of r_{13} by the extreme values of $r_{13\cdot 2}$, *viz.* ±1. In particular, the lower limit of r_{13} is given by:

$$r_{12}r_{23} - [(1 - r_{12}^2)(1 - r_{23}^2)]^{1/2}$$

This lower limit is tabulated below for various combinations of r_{12} and r_{23}. The table is symmetrical about the diagonal.

r_{23} \ r_{12}	0·900	0·925	0·950	0·975
0·900	0·62	0·67	0·72	0·78
0·925		0·71	0·76	0·82
0·950			0·81	0·86
0·975				0·90

One concludes that unless r_{12} and r_{23} are each at least 0·9, one may be quite mistaken in supposing that 'high' correlation between x_1 and x_2 and between x_2 and x_3 necessarily implies 'high' correlation between x_1 and x_3.

The relevance of this demonstration to the argument in the main part of the paper may be seen by replacing x_1, x_2, x_3 by y_i, $\bar{y}$ and w respectively.

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[15] See, for example, S. Siegel, *Nonparametric Statistics* (McGraw-Hill, 1956), Ch. 9.

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Imputation Systems of Corporation Tax within the EEC

C. W. Nobes

The design of the present UK system of corporation tax is sometimes misunderstood. It becomes clearer when it is compared to the systems operated in other countries. This article contrasts the workings of imputation in our own and other systems. Also, one of the Meade Committee's proposals for reform is examined. Then, the behaviour of our system during an inflationary period is briefly discussed. Finally, the purposes and current progress of the harmonisation of corporate taxation in the EEC are looked at.

Systems of corporation tax

Systems of corporation tax are often divided[1] into three types: imputation, classical and split-rate. The UK system in 1965–73 was a classical system. Under such systems, company profits are taxed without a deduction for dividends paid; then the dividends are fully taxed as investment income in the hands of the shareholders. The United States and the Netherlands are examples of countries which still have classical systems. These are described by other writers.[2]

The other two types of system (imputation and split-rate) are designed to mitigate the above 'economic double taxation' of dividends for the reasons mentioned below. Imputation systems approach this mitigation by imputing to the shareholders some or all of the tax paid by companies. For example, taxpayers in the UK are deemed to have paid tax at the basic rate on their dividends grossed up at the basic rate. Split-rate systems tax distributed profits at a lower rate than retained profits. Such systems have a similar effect to imputation systems. Indeed, the present UK imputation system can be redesigned to look like a split-rate system with exactly the same corporation tax and income tax burdens (see the appendix).

There are other adjustments that can be made to mitigate double taxation. For example, in the USA the classical system is modified in that the first $100 of dividends received by an individual each year are exempted from personal income tax. Alternatively, the 'primary dividend' system allows companies to deduct some proportion of dividends in the calculation of their taxable incomes. Such a system has operated in Sweden and Iceland. We will return to different systems in the section on harmonisation. Meanwhile, attention will be directed to imputation systems.

The introduction of an imputation system in the UK in 1973 seems to have been the result of three main factors. First, there was the need to harmonise practice within the EEC. This will be discussed later. Second, there was an equity argument against the economic double taxation of dividends. This argument, also considered later, involves a comparison of incorporated and unincorporated businesses. The nature of the inequity depends on whether one is considering retained or distributed profit. This second argument was closely linked with a third: that an imputation system would encourage effective investment by reducing the classical system's bias against distribution of profits.

The purpose behind this third argument was a desire to improve the *quality* of investment. The theory is that there should be larger payments of dividends once economic double taxation is eased. This should lead to the movement of resources away from the many averagely profitable companies towards profit-maximising investors. These should direct the funds on to those companies which, because of their profit records, are most attractive and can use resources most effectively. Even if these larger dividend payments lead to smaller total investment, due to leakage into taxation and consumption, it can be argued that this should be more than compensated for by better quality investment.[3]

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[1] A. J. van den Tempel, *Corporation Tax and Individual Income Tax in the EEC*, Brussels, 1970; International Bureau of Fiscal Documentation, *European Taxation*, vol 12, nos 5 and 6, 1972; OECD, *Theoretical and Empirical Aspects of Corporate Taxation*, Paris, 1974.

[2] C. F. McCarthy, W. M. Mann and W. A. Gregory, *The Federal Income Tax*, Prentice-Hall, Englewood Cliffs, NJ, latest edition; J. F. Chown, *Taxation and Multinational Enterprise*, Longman, London, 1974, ch. 4; M. R. Saunders, *Tax Planning for Businesses in Europe*, Butterworth, London, 1977, ch. 8.

Unfortunately, it has not been possible to establish whether the imputation system in the UK would lead to greater dividends, because of such complicating factors since 1973 as high inflation and dividend restrictions. Also, it is not at all clear that it is possible for investors to tell which companies will make the best use of investment funds. A company's past record of profit does not reliably show that it will continue to be a more efficient user of investment resources.[4]

Having briefly introduced the imputation system, we should now look at how it works in the UK, France and West Germany.

The workings of the UK imputation system

One way of illustrating the workings of imputation is to make a comparison with the classical system. Suppose that a company earns net profits before tax of 10,000 every year. Suppose also that the rate of corporation tax under the UK classical system was 40% and under the imputation system is 52%. In each case, the basic rate of income tax is 33%. The tax credit *imputed* to unincorporated shareholders is linked to the basic rate of income tax for administrative simplicity. For this example, it is 33/67 of the cash dividend, as in 1978/79. Income tax is not deducted at source from dividends in the imputation system.

		Classical System		*Imputation System*
Company:	Net profit before tax	10,000		10,000
	less Corporation tax (40%)	4,000	(52%)	5,200
	Profit available for distribution	6,000		4,800
	Dividends (say)	2,000		1,340
	Undistributed profit	4,000		3,460

The 2,000 gross dividend under the classical system is equivalent to the 1,340 cash dividend under the imputation system:

Shareholder:	Dividend	2,000		1,340	
	less Basic rate income tax deducted at source (33%)		660		0
	Cash received		1,340		1,340
	Tax credit imputed (33/67 × 1340)	—		660	
	Income to be taxed	2,000		2,000	
	Tax at basic rate (33%)	660		660	
	less Tax already paid	660		—	
	less Tax credit imputed	—		660	
	Tax due		0		0
	Net dividend after tax		1,340		1,340

This shows that, for the basic rate taxpayer, the payment of dividends causes no extra tax to be paid by either the company or the shareholder. (Advance Corporation Tax, ACT, is discussed below.) Consequently, when the tax on both company and shareholders is considered, companies with large payout ratios suffer less tax than they would under a classical system. This is despite the higher rate of corporation tax under the imputation system. The precise proportion of dividend payout above which this is true depends on the levels of corporation tax and income tax.

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[3] OECD, *Theoretical and Empirical Aspects of Corporate Taxation*, Paris, 1974.

[4] G. Whittington, *The Prediction of Profitability*, Cambridge University Press, 1971, chs 4 and 5.

So far, shareholders have been assumed to be unincorporated. For corporate shareholders, there is a *full* imputation of the corporation tax borne by the paying company on the profits out of which the dividends are paid. That is, the receiving company pays no tax on its dividend income.

Returning to unincorporated shareholders, those who pay no income tax because of low taxable incomes can claim 'repayment' of the tax credit. Those whose marginal rates are above the basic rate pay income tax on the 2,000 of the above example and can claim the tax credit. The effect on higher rate taxpayers is interesting. Let us use the above example but take 98% marginal income tax rate (i.e. 83% income tax and 15% investment income surcharge; the highest rates in 1978/79).

Shareholder:

Cash dividend		1,340
Imputed credit (33/67)	660	
	2,000	
Income tax (98%)	1,960	
Tax credit	660	
Tax to pay		1,300
Post-tax receipt		40

The tax rate here on the cash dividend is 97% (i.e. 1,300/1,340). This means that the so called 'tax credit' has merely reduced the individual's tax rate by 1%. Note that for basic rate taxpayers, the effective rate of income tax on *cash* dividends is 0%; but for 98% taxpayers it is 97% (rather than 98% less 33%, as might appear at first sight). For these latter taxpayers, there is little useful imputation of the 5,200 corporation tax borne by the paying company. There is full corporate taxation of the company's taxable profit, followed by 97% taxation on the cash dividend paid out of that taxed profit.

Under the 'classical' system of 1965–73, the 98% taxpayer would have been treated as follows, using the same basic rate of income tax:

Gross dividend		2,000
Tax deducted at source (33%)		660
Net dividend received		1,340
Tax on 2,000 at 98%	1,960	
Tax already deducted	660	
Tax to pay		1,300
Post-tax receipt		40

This shows that, despite the remarks in the preceding paragraphs, the present partial imputation system is better for dividend recipients than the classical system, even for high rate taxpayers. To achieve a post-tax receipt of 40 under a classical system, the company has to pay out 2,000 rather than 1,340. Therefore, the bias against distribution has been lessened by the change to the imputation system. However, it has certainly not been removed, unless none of the shareholders pays tax at above the basic rate. As will be shown later, the bias *can* be removed by such an imputation system as that of West Germany.

If similar calculations to those above are performed for other rates of income tax, the table below can be constructed. It shows how the imputation system becomes steadily less useful as higher rates of personal taxation are reached. The general relationship is that the 'effective rate' is given by (m − b)/(1 − b), where m is the marginal rate and b is the basic rate.[5]

Individual Marginal Tax Rate (m)%	*Effective Rate on Cash Dividend %*
33	0
50	25
70	55
98	97

This 'effective rate' is *negative* for those paying 0% or 25% marginal tax rates. This rate is relevant for dividend policy. Assuming that the company can reclaim ACT (see below), the 'effective rate' is the one that determines the extra tax which will be borne by the company-plus-shareholders as a result of the payment of dividend. In the case of non-taxpayers, the total tax borne by company-plus-shareholders will actually *fall* as a result of a payment of dividends.

It should be noted in summary that a partial imputation system *can* totally remove double taxation and the bias against distribution when the tax credit cancels the personal liability. Alternatively, the double taxation can be removed by imputing all the corporation tax to shareholders; but even if there is no double taxation because there is no effective liability to corporation tax, there could still be some bias against distribution if personal income tax is larger than the underlying corporation tax and only operates when dividends are paid.

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[5] i.e. $\left(\frac{Dm}{1-b} - \frac{Db}{1-b}\right) \div D$, where D is the cash dividend.

Advance corporation tax

A source of some confusion is the Advance Corporation Tax (ACT). This is an advance on the later payment of corporation tax (9–21 months after a company's year-end). It is not an essential part of an imputation system, as will be shown. It was designed mainly to improve the government's cash flow by speeding up tax payments. A second reason for it relates to those cases where there is no corporation tax liability (CTL) for there to be an advance of. This reason is discussed later.

ACT is related in size to the level of dividend payments: in 1978/79 it amounted to 33/67 of the dividend, when the basic rate of income tax was 33%. Any ACT paid[6] causes a set-off against the eventual CTL leaving only the difference (mainstream corporation tax) to be paid. ACT is *not*, therefore, an extra tax on dividends, assuming that there is an adequate CTL.

One supposes that, when the imputation system was planned, it was not clear that there would often be inadequate corporation tax liabilities to allow a full ACT set-off. This problem of 'unrelieved' ACT occurs because of low profits and high tax allowances. Particularly in inflationary periods, capital allowances and stock reliefs may greatly reduce taxable profits. In addition, despite low taxable profits, dividends have been rising in money terms. As far as has been possible within a period of dividend restraint, dividend policy seems to have been based on a desire to compensate shareholders for a fall in the real value of dividends rather than on estimates of changes in 'real' profit.[7] Therefore, there have been many examples of unrelieved ACT.[8]

This illustrates the second reason for ACT. That is, it ensures that imputation credits are not granted to recipients of dividends when there has been no underlying payment of corporation tax to impute. ACT is paid on dividends irrespective of a company's taxable profits and can normally only be relieved against CTL. Consequently, the shareholders' tax credits will always have been paid for.[9] In order to make this operate more exactly, the ACT set-off in any year is limited to the amount of ACT that would relate to a dividend that, when 'grossed up' for the ACT, would absorb all the taxable income. To reduce the harshness of this, unrelieved ACT can be carried back for 2 years or forward indefinitely against other years' CTL.

A prevalent misconception is that the reason that there are tax credits in the UK imputation system is because there is an ACT. We have seen that, for the above two good reasons, the tax credits amount to the same size as the ACT. However, in theory, the tax credits are not due to ACT but are a partial imputation of the CTL in order that double taxation of dividends is mitigated. This general point about imputation systems is made clear by two aspects of the French and German systems. These are that, in each case, the imputation tax credits are based on the rates of *corporation* tax and that there are no general equivalents of ACT. Perhaps even more revealing is the fact that the Irish imputation system, although it has a tax credit based on the basic rate of income tax and operates in other ways similarly to the UK system, also has no ACT.[10]

Having outlined the UK system, it is now time to draw contrasts with the French and German systems. In each case, the rules relating to the determination of taxable income, capital gains, tax collection, etc are interestingly different from UK practice.[11] However, our present purpose requires that attention be directed to the methods of imputation.

The French imputation system

Corporation tax in France is levied at a rate of 50% on taxable profit. Dividends are not deductible in the calculation of taxable profit; they are paid out of taxed profit. Also, these dividends are subject to personal income tax in the hands of the recipients. However, there is a tax credit (*avoir fiscal*) which imputes to the shareholders some of the tax paid by the company. So far, the system is similar to the UK partial imputation system. An important difference is that the size of the tax credit is not linked to the basic rate of income tax, but is one half of the underlying corporation tax on the dividends. An example follows.

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[6] ACT is paid using a quarterly accounting system. The need to pay ACT is cancelled out to the extent that the company has received franked investment income which has caused ACT to be paid by the paying company.

[7] P. R. A. Kirkman and C. W. Nobes, 'Dividend policy and inflation', *Accountancy*, October 1976.

[8] e.g. 'Now institutional shareholders hit back', *Accountancy*, August 1975.

[9] Either by the paying company or another company; see note 6.

[10] *Corporation Tax Act 1976 (Ireland)*; SSAP, CCAB Accountancy Bodies, 1977, Appendix 3.

[11] J. F. Chown, *op. cit*, ch. 4; M. R. Saunders, *op. cit.*, chs 2 and 3.

Company:	Taxable profits	10,000
	Corporation tax	5,000
	Distributable profit	5,000
	Dividend	4,000
	Undistributed profit	1,000
Shareholder:	Dividend	4,000
	Avoir fiscal	2,000
	Taxable income	6,000
	Tax credit available	2,000

This 50% imputation is of a similar size to the UK imputation (see section on harmonisation). However, because the top rates of French income tax are low compared to those in the UK, the imputation remains very useful for all unincorporated shareholders.

The French treatment of *corporate* shareholders is very different from UK practice. Instead of full imputation of corporation tax, the treatment depends on whether or not the recipient is a 'holding' company (one that owns at least 10% or FF 10m in the paying company). Holding companies pay tax on 5% of (grossed up) dividend income and take the tax credit appropriate to that proportion. Other companies pay corporation tax on all dividends. These dividends are grossed up by the tax credit which is then available to the company. In the above example, if the shareholder were a non-holding company, the corporation tax due on the 'net' dividend income of 4,000 would be 1,000 (i.e. 6,000 × 50%, less 2,000 tax credit).

As can be seen from the definition of a holding company, this disadvantageous tax treatment, under which dividends may partially bear corporation tax several times, only applies to small holdings not to subsidiaries or important trade investments. These latter holdings receive approximately full imputation, as mentioned above.

It should be noted that there is no general equivalent of ACT in the French imputation system. However, in cases where no French corporation tax has been borne on income out of which dividends are paid, a *précompte* of 33⅓% is deducted at source from the dividend. This is charged in order to cover the net cost to the Revenue of the *avoir fiscal* available to the recipients. An example of this occurs where a French company receives dividend or branch income from abroad and has chosen to pay corporation tax on income from French sources only.[12] (An analogous option is not available to UK companies; and a *précompte* would not be necessary anyway because of ACT.)

The West German imputation system

By the corporation tax reform law of 1976, the split-rate system of corporation tax was replaced by an imputation system from 1st January 1977. However, the German imputation system continues to include different rates for distributed and undistributed profits: 36% for the former and 56% for the latter. Credit for the *full* amount of the underlying corporation tax is given to the recipients of dividends. There is also a withholding tax of 25% on dividends, which is a deduction of tax at source by the paying company on behalf of the Revenue authorities. It is designed to make evasion more difficult. Resident shareholders can claim credit for the withholding tax. These various points can be illustrated:

Company:	1.	Taxable income	10,000	
	2.	Normal rate corporation tax (56%)	5,600	
	3.	Balance before relief	4,400	
	4.	Retained profit (e.g. ¼)	1,100	
	5.	Distribution (¾)	3,300	
	6.	Reduction of corporation tax	1,500	i.e. (56% less 36%) of ¾ of 10,000
	7.	Total distribution	4,800	
	8.	Withholding tax (25%)	1,200	
	9.	Net distribution	3,600	

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[12] M. R. Saunders, *op. cit.*, ch 2.

Shareholder:					
	10.	Net distribution		3,600	
	11.	Tax credits: withholding	1,200		
	12.	imputed	2,700		i.e. 36% of $\frac{1}{4}$ of 10,000
				3,900	
	13.	Taxable income		7,500	
	14.	Income tax (e.g. 40%)		3,000	
	15.	Tax credits		3,900	
	16.	Refund		900	

Note that the reduction in corporation tax in line 6 means that distributed income bears only 36% tax. The shareholders receive the net distribution after a withholding tax (line 8), which can be treated as a tax credit (line 11). The imputed tax credit in line 12 is the full amount of corporation tax borne on the distributed income. The result of all this is that the company has paid 4,100 (i.e. 5,600 less 1,500) in corporation tax and has also deducted and paid 1,200 in withholding tax on the distribution. The shareholders pay no further tax and, moreover, they receive a refund of 900. The total received by the shareholders is, therefore, 4,500 (i.e. 3,600 + 900). This is 60% (because 40% has gone in income tax) of 7,500 (i.e. the distribution of $\frac{3}{4}$ of the income of 10,000).

This demonstrates that, as a result of full imputation, dividends bear no corporation tax but only income tax. The double taxation of dividend income has been completely removed for all unincorporated shareholders. This is very different in its effects from the UK system. Indeed, unlike a split-rate system, this German dual-rate imputation system cannot be re-expressed in order to behave identically to the British or French imputation systems. It is essentially a different kind of system. Ironically, although a move to an 'imputation' system appears to be a harmonising action, the previous German split-rate system was closer in effect to the British or French systems.

Turning to corporate shareholders, they also receive full imputation because dividend income is exempt from corporation tax when received by holding companies (those with at least a 25% holding). Alternatively, when the recipient is not a holding company, the treatment is similar to that for unincorporated shareholders. This includes the charging of a withholding tax and the process of imputation. The net result is that the dividend income only bears corporation tax once.

Again there is no ACT. However, there is a similar German provision to the French *précompte* in those cases where income paid out as dividends has not borne German corporation tax due to double taxation treaties or other reasons.

The Meade Committee

The Meade Committee[13] devoted some attention to the major problem in corporate taxation which imputation is designed to solve, that is the different taxation of retained and distributed profits. On the one hand, it might be argued that any double taxation of income (on the company and on the shareholder) is inequitable when comparisons are made with unincorporated businesses. This argument is used to justify imputation of corporation tax to the shareholders. On the other hand, it is argued that it is inequitable, again compared to unincorporated businesses, to allow companies to accumulate retained profits which have not borne tax at the shareholders' marginal rates. This argument may justify a separate corporation tax at a higher rate than basic rate income tax, if shareholders are assumed to pay higher rates of tax.

One approach to solving these problems is that of the split-rate systems, which have a lower rate of corporation tax for distributed income than for retained income. Other approaches seen above are to tax corporate profits at fairly high rates and then to impute all or part of this tax to shareholders with their distributions.

The Meade Committee reasonably proposed that the theoretically correct solution is for retained profit to be apportioned to shareholders just as if they were partners ploughing profit back. This apportionment would be taxed with the dividends at the shareholders' marginal tax rates. There would be a full imputation of corporation tax via a tax credit on both distributed and apportioned profit. In this way, the company would effectively bear no tax, and corporation tax

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[13] Meade Committee, *The Structure and Reform of Direct Taxation*, IFS/Allen and Unwin, London, 1978, chs 7 and 12.

Table A
The Value of Tax Allowances to UK Companies £m

	1974	*1975*	*1976*
Capital allowances	2,981	3,589	4,149
Stock relief	720	1,490	940
Taxes on company income	1,957	1,955	2,316

Notes: The 'value' of the capital allowances is taken to be 52% of their size. The figures for stock relief relate to fiscal years rather than calendar years. The table is drawn from several sources and, therefore, should be taken to give only a broad indication of magnitudes.

Sources: *National Income and Expenditure 1966–1976*, Central Statistical Office HMSO, 1978, pp 39 and 132; *Times Business News*, 30 March 1977, page 21; *Accountancy Age*, 3 March 1978, page 3.

would be a sort of withholding tax. This would solve the problems of double taxation and retained profits. Incidentally, it would be necessary to adjust capital gains tax in order to avoid a double taxation of the gains arising from retained profits.

Clearly, there would be some administrative problems with this system and some unfortunate implications for the cash flow of shareholders of companies which retain a high proportion of profits. However, the idea is very attractive theoretically. The present German system's treatment of *distributed* income is close to the Meade suggestions; and it taxes retained profits at a rate (56%) which is also the top marginal rate of income tax. The UK provisions that require close companies to apportion about half of their profits to shareholders so that they may bear income tax are also concerned with this problem.

Inflation

There are numerous detailed differences between the operations of the different corporation taxes discussed in this article. These are not so much differences of broad *system* but alternative ways of measuring taxable income, treating income from abroad, and so on. These matters are vital for many companies but must be left for tax books[14] and tax professionals. However, there are two particular differences between UK and Franco-German practice which might be said to amount to a difference of system with respect to inflation adjustments.

The first difference is that there has been a system of stock relief[15] in the UK since 1973, which approximately subjects taxable profit to a 'cost-of-sales adjustment'[16] by removing part of the holding gains on stocks. This is a very important adjustment (see Table A). In a similar way, US companies are allowed to use a last-in first-out (LIFO) system of inventory valuation as a partial correction. However, in France and Germany (and other continental European countries) there is no adjustment for stock holding gains.

The second difference is that in France and Germany (and indeed in most of the rest of the EEC and in the USA) depreciation is an allowable expense for tax purposes. Depreciation rates are generally prescribed and based on estimated useful lives of the appropriate assets. In contrast to this, the UK system of capital allowances means that the whole cost of plant and machinery and 54% of industrial buildings can be charged against profit in the year of purchase. In the year of purchase, the historic cost *is* the current cost. In this sense, there is also a 'depreciation adjustment'[16] to taxable profit (see Table A).

As a result of these two factors, the UK corporation tax system adjusts taxable income in a very approximate way towards a current cost operating profit figure. This reduces (or possibly even eliminates) the extent to which taxation is based on unrealistically high profit figures during inflationary periods. This is not the case with the French and German corporation taxes.

Harmonisation

The Treaty of Rome calls for the elimination of customs duties between member states, the introduction of common tariffs with third countries, and the removal of barriers to the free movement of persons, capital, goods and services. The interest in taxation shown by the EEC Commission, which is the guardian of the Treaty of Rome, stems from this desire to promote the free movement of persons, capital, goods and services. The free movement of goods and services implies particularly the harmonisation of indirect taxes. Similarly the free movement of people and capital implies the harmonisation of direct taxes. If there were no harmonisation of taxes and if barriers to movement were eliminated, there might then be encouragement or obstruction of flows of people, capital and so on to particular countries within the EEC for purely fiscal reasons.

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[14] J. F. Chown, *op. cit*,; M. R. Saunders, *op. cit.*

[15] S. R. James and C. W. Nobes, *The Economics of Taxation*, Philip Allan, Oxford, 1978, ch. 12.

[16] Accounting Standards Committee, *Current Cost Accounting, ED18*, London, 1976.

It is the aim of harmonisation[17] that the conditions of competition and the returns to capital and effort should not be significantly affected by differences in effective tax burdens. Just by having looked at the corporate taxation systems in three EEC countries, it should be clear that the scope for harmonisation is considerable. However, there are much larger differences—for example, the Netherlands and Luxembourg have classical systems of corporation tax. The EEC Commission's activity in this area of tax harmonisation will now be charted.

In 1962, the Neumark Committee[18] recommended to the Commission that a split-rate system should be adopted. As has been said, this is similar to the pre-1977 German system and is designed to mitigate the effects of 'economic double taxation' of dividends by including a lower rate of corporation tax on distributed profits. In 1970, the van den Tempel Report[19] described the three types of corporation tax systems, and recommended the classical system.

However, the Commission's draft Directive[20] of 1975 on the harmonisation of corporate taxation proposes the imputation system. This must be partly due to the fact that a majority of EEC countries were already using such a system or had plans to introduce one. In 1975, Belgium, France and the UK were using an imputation system. Since then, Germany, Denmark, Ireland and Italy have introduced one. For rates of tax and tax credit see Table B.

Some of the reasons[21] for choosing an imputation system have been mentioned. They include the fact that the tax credit reduces the bias against distribution and favours small investors (lower rate taxpayers). Also, the system should reduce the incentive for evasion by lowering the effective marginal rate of tax on dividends. In addition, since the corporation tax rate tends to be higher under an imputation system, there is a fairer comparison between the rates of tax borne on company retained profits and partnership profits.

The draft Directive proposes that there shall be imputation systems in operation with a single rate of tax between 45% and 55% (Article 3).[22] Also, Article 8 proposes that imputation credits shall be between 45% and 55% of the corporation tax that would have to be paid on a sum equal to the taxable income out of which the dividend could be paid (i.e. on the dividend increased by the corporation tax). For example, looking at the UK system in 1978/9:

Taxable income	1,000
Corporation tax	520
	480
Dividends	480
Undistributed profit	0
Recipients' income	480·00
Tax credit (33/67)	236·42
'Grossed up' dividend	716·42

$$\frac{\text{Tax credit}}{\text{Corporation tax}} = \frac{236{\cdot}42}{520{\cdot}00} = \quad 45{\cdot}47\%$$

Full distribution has been chosen so that it is easy to see that '520' is the corporation tax that would be paid on the dividends 'grossed up' at the corporation tax rate. The level of distribution will not affect this percentage.

It can be seen that, with the credit at 33/67, the UK system satisfies the above requirements. However, as was mentioned earlier, there are strong administrative reasons for linking the imputation credit directly with the basic rate of income tax. The lowering of the rate of 30% for 1979/80 reduces the credit percentage to 39·56%, which falls below the Directive's guidelines.

Another requirement of the draft Directive is that the corporation tax and imputation credits should not be discriminatory between companies or shareholders in different member states (Article 4). For example, the tax credit should be available to all. Further, the costs of the tax credit should be borne eventually by the state of the distributing corporation, even though another state may

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[17] D. Dosser, *British Taxation and the Common Market*, Charles Knight, London, 1973, ch. 1, 4 and 6; and R. Burke, 'Harmonisation of Corporation Tax' *Intertax*, June–July, 1979.

[18] Neumark Committee, *EEC Reports on Tax Harmonisation*, International Bureau of Fiscal Documentation, Amsterdam, 1963.

[19] A. J. van den Tempel, *Corporation Tax and Individual Income Tax in the EEC*, Brussels, 1970.

[20] EEC Commission, *Proposal for a Directive concerning the Harmonization of Systems of Company Taxation and of Withholding Taxes on Dividends*, COM(75) 392 final, Brussels, 1975.

[21] International Bureau of Fiscal Documentation, *European Taxation*, Vol. 16, Nos. 2,3,4, 1976, pp. 41–51.

[22] C. W. Nobes, 'EEC imputation systems of corporation tax', *Journal of Business Law*, July 1979.

Table B

EEC imputation systems in 1979

Country	*Imputation Introduced*	*National Corporation Tax rate %*	*Tax credit as proportion of dividend*	*Tax credit as % of underlying CT*
Belgium	1963	48	57·5	62·29
France	1965	50	50	50
UK	1973	52	42.9 (i.e. 30/70)	39·56
Ireland	1976	45	42·9 (i.e. 30/70)	52·38
W. Germany	1977	56 & 36	56.25	100
Denmark	1977	37	15	25·54
Italy	1977	25[2]	33.33	100

Source for columns 3 and 4: Sections E of *The Taxation of Private Investment Income*, International Bureau of Fiscal Documentaion.

Notes: 1 Withholding taxes have been ignored throughout.
2 There is also a deductible local income tax of 15% making a total of 36.25%.

lose income tax revenue initially. There is to be a clearing house arrangement for settling such claims.

There was a discussion above on the usefulness of ACT as a means of ensuring that imputation credits cannot be granted without the payment of underlying corporation tax by the distributing company. The draft Directive is concerned with this area, and Article 9 proposes a *précompte* (or compensatory tax) for distributions where there is insufficient taxed profit in the present or preceding *five* years.

Also, Articles 14 to 17 propose a withholding tax of 25% on dividends. This is designed to discourage tax evasion by arranging for deduction of tax at source. The tax can be treated as a credit by EEC shareholders. This presents a significant disadvantage to investors in third countries. It is hoped that this problem will be alleviated before the Directive is passed.

The draft Directive has been criticised on many grounds. The omission of a proposed treatment for capital gains is important. Unless their taxation is also harmonised, there will be much wasteful manoeuvring in order to create capital gains in favourable member States rather than *income* in any State or capital gains in unfavourable States. Another criticism is that other corporate taxes, like net worth, turnover and local taxes, must be included in the harmonisation. More generally, the different rules relating to the calculation of taxable income need attention if total effective tax burdens are to be harmonised. A further criticism is that some countries in the EEC are intrinsically less attractive to companies for economic, geographical and political reasons; and that these countries need advantageous corporate tax regimes if they are to encourage investment and employment. Therefore, to harmonise taxation without altering these other factors might give rise to unpleasant regional side-effects.

The 'opinion' of the European Parliament[23] on the draft Directive has stressed the need to include the problem of different tax bases as well as tax systems. Partly as a result of this and partly because member states are not enthusiastic about changing their tax systems or losing flexibility, the 1975 draft Directive (and that of 1978 concerning the taxation of financial institutions)[24] have been delayed and may need considerable amendment.

Meanwhile, little notice seems to have been taken of the draft Directive. For example, the new German system goes outside the proposals in a number of ways.[25] It has two rates rather than a single rate, both of which are outside the proposed range. Also, the tax credit is outside the range. Indeed, as far as rates are concerned, Table B shows that three out of the seven EEC countries with imputation systems had corporation tax rates outside the proposed range in 1979, and five out of the seven had tax credits outside the proposed range. These five include three of the systems introduced after the draft was issued.

So, harmonisation will probably be a slow process, and it needs to advance on a wider front than at present proposed. However, the proposals should give an indication of the direction of future changes in corporate taxation in the EEC.

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[23] *Official Journal*, 1979, C 140.

[24] EEC Commission, *Proposal for a Directive on the Application to Collective Investment Institutions* [of the 1975 draft Directive], COM(78) 340 final, Brussels.

[25] R. T. Bartlett, 'The harmonization of company taxation within the EEC', *Journal of Business Law*, July 1977.

Summary

Corporation tax systems may be divided into three types with respect to their approaches to the taxation of distributed income. Imputation and split-rate systems are both designed to mitigate the economic double taxation of dividends which is inherent in classical systems. The former two systems can be viewed as different expressions of the same system. This article is mainly concerned with imputation systems, particularly those of the UK, France, West Germany and Ireland. Of these, only the German involves the full imputation to the shareholders of the corporation tax paid by the company. The others, therefore, still entail some double taxation of distributed income for higher rate taxpayers. In the UK for the highest rate taxpayers, there is almost complete double taxation.

The UK system is the only one in the EEC to include a general ACT. It is also unusual in that the tax credit attached to dividends is linked to the basic rate of income tax and has been contrived to be the same size as the ACT.

The French have one of the oldest imputation systems. It involves a tax credit of half the underlying rate of corporation tax. Unlike the UK system, the French system entails less than full imputation for incorporated shareholders. There is a *précompte* to pay for the tax credit where no French corporation tax has been paid.

The recent West German imputation system has two rates of tax, and full imputation to shareholders. This completely removes the economic double taxation of dividends. There is a similar provision to the *précompte*.

The Meade Committee recommended a system that would tax both distributed and retained profits at the shareholders' marginal rates of income tax. There would be full imputation of corporation tax. In this way, retained profits would not be allowed to accumulate without bearing income tax, but no profits would suffer economic double taxation.

An important difference between the UK and continental imputation systems is that the former is approximately adjusted for the effects of inflation.

Proposals for harmonisation of corporate taxation within the EEC date back almost as far as its foundation. The most recent proposals are contained in a draft Directive of 1975, which has yet to be approved by the Council of Ministers. It proposes an imputation system with rates and tax credits within certain bands. However, there seems little prospect of immediate progress in this area. The four EEC imputation systems introduced since the draft have all gone against it in some way. Also, the major differences in the determination of taxable income mean that the draft Directive would not harmonise tax burdens even if it harmonised some aspects of tax systems.

Appendix

The restating of the UK imputation system to resemble a split-rate system

Taking the same corporation tax rate as that used to illustrate the imputation system in the second section of the paper, let us redesign the system to make it look like a split-rate system without ACT.

	Imputation System	
Net profit before tax	10,000	
less Corporation tax (52%)	5,200	(ACT = 660, MCT = 4540)
Distributable profits	4,800	
Dividends (say)	1,340	
Undistributed profits	3,460	
Cash dividends received by shareholder	1,340	
Tax credit imputed (33/67)	660	
Income to be taxed	2,000	
Tax at basic rate (33%)	660	
Tax credit	660	
Tax due	0	
or		
Tax at higher rate (e.g. 50%)	1,000	
Tax credit	660	
Tax due	340	

Split-rate System

	Net profit before tax	10,000		
	For distribution	2,000 →		2,000
		8,000	tax deducted at source (33%)	660
	Tax at 52% on 8,000 = 4,160			
			net cash dividend	1,340
	Tax at 19% on 2,000 = 380			
		4,540		
	Undistributed profit	3,460		
	Gross taxable dividend	2,000		
	Tax at basic rate (33%)	660		
	Tax deducted at source	660		
	Tax due	0		
Or	Tax at higher rate (e.g. 50%)	1,000		
	Tax deducted at source	660		
	Tax due	340		

Let us now postulate a split-rate system with a corporation tax rate of 52% on undistributed profit, and 19% on distributed profit. Basic rate income tax is deducted at source under this system. Note that real split-rate systems usually work in the way illustrated, that is with the tax on the distributed income being paid out of the more highly taxed income (see above).

Notice that, in each case, the total tax paid by the company to the Revenue is 5,200. Also, the timing of the payments will be the same. The 660 paid in the split-rate system will be equivalent to ACT. The 4,540 will be equivalent to Mainstream Corporation Tax. Also, the net income tax due is the same for both 'systems'.

More generally, let

C_r = nominal rate applicable to retained profit
C_d = nominal rate applicable to distributed profit
t = rate of tax credit as proportion of dividend
m = marginal rate of income tax paid by shareholders
b = basic rate of income tax
Y = taxable income
D = cash dividend

Imputation System: ($C_r = C_d$), Corporation tax liability (CTL) = $C_r.Y$

(i) $\text{ACT} = D.\dfrac{b}{1-b}$

Tax credit = Dt

(ii) Total income tax paid later

$$= m.D.(1+t) - Dt$$

(iii) $\text{MCT} = \text{CTL} - \text{ACT} = C_r.Y - D.\dfrac{b}{1-b}$

Split-Rate System: Gross dividend $= D.\dfrac{b}{1-b}$

(iii) Total corporation tax

$$= C_r.\left(Y - D.\frac{1}{1-b}\right) + C_d.D.\frac{1}{1-b}$$

(i) Total income tax deducted at source

$$= D.\left(\frac{1}{1-b}\right).b = D.\frac{b}{1-b}$$

(ii) Total income tax paid later

$$= mD.\frac{1}{1-b} - D.\frac{b}{1-b}$$

Now, let particular rates be chosen so that $C_r = C_d + b$. Also, let us set $t = \dfrac{b}{1-b}$ as in the UK. A little algebraical manipulation will prove that the payments made at the same time are the same under both systems, that is (i) is the same under both systems, (ii) is the same, etc.

Pioneers of Income Measurement and Price-Level Accounting: a Review Article

Geoffrey Whittington

Asset Appreciation, Business Income and Price-Level Accounting: 1918–1935. *Edited by Stephen A. Zeff.* Arno Press 1976, $28.
Stabilized Accounting. *H. W. Sweeney.* Arno Press 1978. xiii + 223 pp. $25.
The Economics of Accountancy. *John B. Canning.* Arno Press 1978. viii + 367 pp. $24.

As the debate on inflation accounting continues apparently with unabated force, the interested observer or participant might reasonably wonder whether any real progress is being made, or whether accounting thought is merely moving in circles, rediscovering what was known a generation ago. On a more positive level, he might also wonder whether the contributions of past generations contain some nuggets of wisdom which have been neglected by subsequent writers. The recent reprinting by the Arno Press of two widely recognised (but perhaps not so widely read) classics by Canning (1929) and Sweeney (1936), together with Professor Zeff's collection of papers from the period 1918–1935, provides an admirable opportunity to investigate these possibilities.

1. Asset Appreciation, Business Income and Price-Level Accounting, 1918–1935

Of the three volumes, Professor Zeff's collection must take pride of place, both chronologically and in terms of the relative novelty of its contents, which are not so widely referred to as the books by Canning and Sweeney, although all were originally published in accessible journals. Of the eighteen papers eleven are from *The Accounting Review* and five are from *The Journal of Accountancy*. Nine of the papers are by Henry W. Sweeney, the author of *Stabilized Accounting*, two are by William A. Paton, two by Fritz Schmidt, and one each by five other individual authors. Professor Zeff explains in his Introduction that his original intention was to bring together Sweeney's important theoretical papers, which provide a crucial background to his book and which were excluded from the book itself by the publisher, on commercial grounds. However, papers by other authors, many pre-dating Sweeney, have been added to put Sweeney into the context of his period. The result makes fascinating reading, and the editor is to be congratulated on his selection, and on the excellent critical commentary provided in his fifty-one page introduction: the reviewer exercised the discipline of reading the papers before the critical commentary and was unable to fault the latter on any substantial issue. If a criticism is to be made it is that the scholarly quality of the Introduction, together with the relatively high price of the book and its enduring quality, deserves proper type-setting rather than the photographic reproduction of a somewhat imperfect typescript. The papers are also reproduced photographically from the originals: there is clearly a strong case for this, even when (as is particularly the case with the early Paton paper) the original is badly printed, although the reproduction process could have been better in some instances.

The papers appear in chronological order, starting with 'Should Accounts Reflect the Changing Value of the Dollar?', from *The Journal of Accountancy*, February 1918. The author, Livingstone Middleditch, Jr., is something of a mystery: he appears to have made the seminal contribution to inflation accounting in the North American literature, but no details of his educational background or subsequent career are known.[1] He is concerned with the adjustment of balance sheets, rather than profit and loss accounts, and he appears to be more concerned with general rather than specific price level changes, although the distinction between the two is not made clearly. A number of the subsequent papers (e.g. those by Schmidt and Wasserman) also suffer from a tendency to vagueness in making the distinction between general price level adjustment and replacement cost, a fault perhaps less important in the conditions of extreme inflation which followed the First World War in Europe, from whence came most of the stimulus to early writing in the field. Equally, the emphasis on the balance sheet is fairly common, e.g., Sweeney in 1934 writes 'The balance sheet has usually been regarded as the main financial statement',[2] and this has been thoroughly documented elsewhere.[3]

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[1] Except that, at the time when the paper was published, he was employed by the New York office of Lybrand, Ross Bros. and Montgomery, where Sweeney was subsequently employed in 1923/4.

However, although these early papers are not always clear on matters which would be regarded as commonplace today, they contain many insights which will surprise the reader who is not acquainted with the literature of the period. For example, Paton, writing in 1918, makes a clear distinction between general and specific price level changes and makes a forceful plea for recording unrealised holding gains in accounts (an attitude which he subsequently abandoned). This evoked a response from Bauer[4] (not reprinted in the present volume) which advocated a replacement cost capital maintenance approach. The main advocate of the replacement cost (or entity) approach to capital maintenance, whose work is reproduced here is Schmidt who (in 'Is Appreciation Profit?') makes out a clear case based on the importance of preserving the productive capacity of the firm and of the community and of encouraging sound pricing policies. His account of pricing in the trade cycle foreshadows Professor Baxter's well-known paper.[5] He also recognises (in 'The Importance of Replacement Value') the gain which the company makes when it finances appreciating assets by borrowing rather than by means of its own equity. There is a direct line of succession from Schmidt to the German recommendation of 1975 which was the first official document to adopt a form of the controversial gearing adjustment.[6]

Equally remarkable is the 1929 paper by H. C. Daines which makes an early, if imperfect, attempt to relate accounting information to the needs of different types of decision (inspired by the decision-oriented approach of J. M. Clark's *The Economics of Overhead Costs*, 1923), including some stringent comments on the adverse effects on income measurement of concentrating on reporting what is legally available for dividend distribution.[7] This same paper makes a clear distinction between four possible valuation bases: '(1) liquidation value, or that value which is likely to be realised if the assets were to be thrown onto the market in the process of an orderly or forced liquidation; (2) original cost with proper allowance for decline in value of current assets and allowances for depreciation and depletion of fixed assets; (3) capitalized income producing value; (4) present market price of replacing or reproducing a similar asset in its present state or condition'. Daines' subsequent discussion of the choice between these bases is, not surprisingly, indecisive, although he seems to favour replacement cost.

There are passages in most of these papers which, taken out of context, could well be extracts from much more recent writings. For example, Wasserman's account (1931) of Leger's contribution to inflation accounting could pass as a summary of the Hyde Guidelines:

> ... the errors which creep into the accounts during inflation ... (are classified) ... as follows:
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> 1. Insufficient depreciation of the fixed assets.
> 2. A larger gross profit seems to result than was actually obtained.
> 3. Loss on the excess of the incorporated working capital assets over the incorporated working capital liabilities.

(Wasserman, 'Accounting Practice in France', p. 21.)

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[2] 'How Inflation Affects Balance Sheets', p. 276.

[3] Clifford D. Brown, *The Emergence of Income Reporting: An Historical Study*, Michigan State University, 1971, identifies the 1930s as the period of rapid shift of emphasis from the balance sheet to the profit and loss account, in external reporting.

[4] J. Bauer, "Renewal Costs and Business Profits in Relation to Rising Prices", *Journal of Accountancy*, December 1919, p. 413.

[5] 'The Accountant's Contribution to the Trade Cycle', by W. T. Baxter, *Economica*, May 1955, reprinted in R. H. Parker and G. C. Harcourt, eds., *Readings in the Concept and Measurement of Income*. This theme is also developed in a 1935 paper by R. C. Jones, which is reprinted in the Zeff volume.

[6] Schmidt's influence on recent developments in Germany is analysed by A. Coenenberg and K. Macharzina in 'Accounting for Price Changes: an Analysis of Current Developments in Germany', *Journal of Business Finance and Accounting*, Spring 1976, pp. 53–68.

[7] A theme which is explored thoroughly in a recent paper by D. A. Egginton, 'Distributable Profit and the Pursuit of Prudence', *Accounting and Business Research* (forthcoming).

The most impressive contribution is, however, that of Sweeney, although this may be magnified by the large proportion of his papers which has been selected. His two earliest papers describe the catastrophic course of inflation in Germany during the period 1919 to 1923 and the methods adopted for dealing with it in accounts. The unit for stabilisation was the gold-mark, historic cost balance sheets being translated from paper-marks to gold-marks. Wasserman's paper shows that gold-francs were used in a similar manner in France. Hence the commonly drawn analogy between Constant Purchasing Power accounting and currency translation was, in the early days, not merely an analogy, the stabilised unit being a different currency with a relatively stable value.

Later, we see Sweeney arguing for general purchasing power rather than replacement cost as the basis of capital maintenance for income measurement purposes. It is clear that Sweeney favoured current replacement cost as the basis for valuing individual assets in the balance sheet, but he saw merit in the prudent approach of not recognising unrealised real (or 'stabilised') gains in the profit and loss account. Equally, he did not believe in charging depreciation on such gains to the profit and loss account. His depreciation charge to profit and loss was therefore historic cost, stabilised by a general index, rather than replacement cost, although his balance sheet would show replacement cost and he would report unrealised gains and losses in a separate statement. Sweeney's profit and loss account charge for depreciation was therefore essentially similar to that adopted by Professor Baxter in his recent book.[8] Furthermore, Sweeney recognised the practical problems of assessing replacement costs and regarded historic cost, stabilised by a general index, as an improvement on historic cost where replacement costs were not available.[9]

The theoretical basis of this approach is explored in two essays, 'Capital' and 'Income'. In the former, Sweeney again defends the concept of general purchasing power as expressing the 'main object of economic activity, namely, increased command over economic commodities and services in general', and therefore the appropriate measurement and standard for capital maintenance. However, for asset valuation purposes he explains that he favours replacement cost, as indicating a lower limit on present use value, citing Bonbright (in footnote 17 of 'Capital') as one source of this argument: Bonbright was at this time developing the ideas which he published in 1937 in *The Valuation of Property.*[10] In his 'Income' essay, Sweeney defends the conventional definition of income (including savings) against Irving Fisher's (consumption only), but he condemns conventional accounting practice for failing to recognise unrealised gains, although he concedes that the latter should be reported separately. Both of the theoretical essays are rather diffuse in style, and the arguments are less than decisive in purely logical terms, although admirable in terms of practical common sense. The impression which they leave is that Sweeney was a true accountant at heart, with a commendable concern for theory but ultimately concerned to produce the best information possible, rather than seeking to define theoretically perfect but practically impossible information systems.

Finally, there are two papers by Sweeney with a more practical content. Here he is truly master of his material. In 'How Inflation Affects Balance Sheets' he provides meticulous empirical evidence of how the balance sheets of various European companies were distorted by inflation between 1913 and 1924, comparing published balance sheets in historic paper money with balance sheets stabilised in gold currency. He uses only general indices, even for asset valuations, because replacement costs were unavailable. In 'The Technique of Stabilized Accounting', we are presented with a worked numerical example of Sweeney's system. This is essentially what would today be called a Current Purchasing Power system, with replacement cost valuation of what he calls 'real-value assets' as an optional extra. One controversial feature is that Sweeney, holding strictly to his distinction between realised and unrealised gains, treats as unrealised the gains and losses on current 'money-value assets and liabilities' (including cash) which are held at the end of the accounting period (see footnote (8)). His adherence to this cautious view was the direct result of an earlier exchange of correspondence with J. H. Allen in *The Journal of Accountancy* (reprinted as supplement to Sweeney's paper on German Inflation

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[8] W. T. Baxter, *Accounting Values and Inflation*, McGraw-Hill, 1975. Professor Baxter does, however, diverge from Sweeney by not regarding the gain or loss on money as being unrealised: see Baxter, *op. cit.*, p. 47.

[9] F. L. Clarke, 'A Closer Look at Sweeney's Stabilised Accounting Proposals', *Accounting and Business Research*, Autumn 1976, pp. 264–275, points out a number of subsequent misunderstandings of Sweeney's work, including neglect of his advocacy of replacement cost.

[10] A list of earlier publications by Bonbright and his associates will be found in the Preface to Volume 1 of *The Valuation of Property.*

Accounting), but it also demonstrates Sweeney's desire to cast his system in a manner which is compatible with conventional accounting and, therefore, acceptable to conventional accountants.

2. Stabilized Accounting

Sweeney's book, *Stabilized Accounting,* also emphasises his essentially practical approach. The first three chapters provide a lucid and persuasive case for his system. The first chapter expounds the problems of 'ordinary accounting' when the monetary unit fluctuates in value. The second chapter demonstrates how Sweeney's system of stabilised accounting would deal with these problems and is illustrated by a simple numerical example. This uses only general indices applied to historic cost values, but the third chapter illustrates stabilisation based on replacement cost asset valuations, which the author clearly prefers but is prepared to abandon on practical grounds. Thus, for Sweeney, the central problem is the changing value of the monetary unit, whereas changing relative prices are a subsidiary problem, adjustment for which is an optional refinement. This set of priorities clearly follows from his study of the European hyper-inflations, in which the fluctuating value of money was indeed the central problem.

There follow three practical case studies of stabilised accounting, using disparate types of business (a public utility, a woollen mill and a factoring company), in different conditions of general price changes: one with the general price level the same at the beginning and the end of the year, one with a rising general price index and one with a declining general price index. The stabilisation procedure is described in meticulous detail (especially in the first case study), and particular attention is paid to practical matters of data organisation and computation, e.g. there is a careful explanation of the benefits of using base-year stabilisation as an interim step. The final accounts (which include a Funds Statement) are compared in their stabilised and unstabilised forms, and the additional information obtained by stabilisation is evaluated. Finally, the cost of implementing the stabilisation is calculated ('... the secretary-treasurer was paid $75 a week, and the book-keeper about $30, 3 days of the former's time and 6 days of the latter's would have cost the company less than $75'), and this is compared with the potential benefits. Since the latter include one case where an apparent accumulated surplus (on the conventional appropriation account) becomes a stabilised deficit, and one case where an apparent loss for a year becomes a stabilised profit, it is assumed that the benefits for management and shareholders are considerable.

Finally, there are two chapters which tie up the loose ends of the argument. The first of these deals with 'sundry topics' concerning stabilisation, mostly with practical aspects of its implementation (e.g. the application to partnerships). The second provides 'Answers to Objections Against Stabilized Accounting'. This is Sweeney at his polemical best as he deals in fifteen pages with six 'Sound Objections' and in less than three pages with four 'Unsound Objections'. For example, he starts as follows his reply to the objection that 'Stabilized Accounting is Not Practical in the United States':

> This objection is the one most likely to be met in the United States, although it does not seem to be the strongest objection that can be raised. It is one, moreover, capable of being discussed in a more satisfactory manner than most of the others. For it can be discussed with, at least, some reference to tangible accounting figures. And since to raise it is to give greater emphasis to practicality, which should receive greater emphasis in accounting anyway, this objection is always to be welcomed. (p. 191).

He goes on to reduce the argument to a matter of emphasis rather than essence and then to swing the emphasis in his own favour by ruthlessly effective use of the evidence from his three case studies. Clearly, Sweeney was a formidable opponent in debate and, despite his exhaustive studies of the work of others, very much his own man.

This is not to say that Sweeney's work is without blemish even from a practical standpoint. His insistence on the distinction between realised and unrealised gains on monetary assets introduces an unwelcome degree of complexity into his income statement, and the idea that a loss on money balances held at the end of a period is unrealised implies a narrow definition of realisation which has an unsure theoretical justification. He is also rather ambiguous in his attitude to long-term liabilities: only one of his three case studies involves long-term borrowing and in this case he does not explain his division of the gain on long-term borrowing into a realised element and an unrealised element. He stabilises preference capital as if it were equity, rather than similar to a long-term loan, and gives no explanation of this. He also proposes up-dating arrears of preference dividend by a general index (pp. 179–180) despite the fact that the arrears are fixed in money terms, so that any reduction in the purchasing power of the arrears will give rise to a gain to equity stockholders rather than preferred stockholders. In his treatment of stocks, he is prepared to implement 'cost or market value, whichever is the lower' (pp. 169–173) in stabilised accounting, despite the fact that his earlier arguments suggest that replacement cost is a much better valuation basis if current values are to be used at all. The case studies involve an admirable attention to detail, but some of the generalisations which emerge in the discussion of them would be more convincing if they were justified in terms of the general properties of the stabilised systems (e.g. the fact that companies with net monetary assets will tend to lose from high inflation whereas those with net monetary liabilities will gain) rather than emerging from a mass of detailed numerical calculations based upon three individual case studies. Finally, although Chapter 13 makes clear the author's preference for replacement cost valuation of assets, his subsequent case studies and examples (e.g. on p. 184) are based entirely on the application of a general index to historic cost (except when market value is lower), so that the author's crusading zeal is subsequently spent almost entirely in extolling the virtues of stabilising the unit of measurement rather than those of current valuation (e.g., the argument on pp. 202–3, the final pages of the book, could be taken to mean that the author had no preference for current market value over stabilised historic cost).

These are, however, minor blemishes on a masterpiece. Apparently, the book and the papers in the Zeff volume were all part of Sweeney's PhD thesis: this must surely rate as one of the most substantial theses ever written in Accounting, or indeed in any subject. Perhaps the most impressive feature of the work is its relentless thoroughness in exploring every aspect of the subject. Much of what Sweeney has to say is as clear and persuasive as anything written today: if the average professional accountant were acquainted with the first three chapters of Sweeney's book, inflation accounting practice would have advanced far beyond its current state. In the event, after the publication of his book, Sweeney made no further substantial contributions to the literature of accounting and devoted himself mainly to a career as a practising certified public accountant. Unemployment was the major problem of the 1930s, whereas inflation had been a major concern of the 1920s, particularly in Europe, so that the will to adopt stabilised accounting was absent, and Sweeney's eloquent pleas fell on deaf ears. He himself recognised the importance of the contemporary economic environment in providing incentives to change accounting practice, in a passage which has great relevance to the more recent debate on inflation accounting:[11]

> As a consequence of the rapid rise in prices during and after the recent great war, the previous high degree of solidarity existing in the opinions of accountants throughout the world became disrupted. Many then adopted the contemporaneously radical view that depreciation should be based on cost of reproduction. However, after the importance of the subject had begun substantially to wane during the subsequent periods of comparatively stable price levels, these rebels returned in large numbers to the ranks of those who had continued to hold the old traditional views. The reproduction cost method was, therefore, it would seem, a forward step that traversed about half the distance toward the goal of real-capital maintenance. It was doubtless a safer and more conservative plan of procedure to adopt during the inflation years than the old theory, because it gave rise to higher depreciation charges—charges probably more nearly related to those that would have resulted from attempts to preserve original, real, economic capital. (Sweeney, 'Stabilized Depreciation', 1931, p. 173.)

3. The Economics of Accountancy

One major writer who had a profound effect on accounting thought in the period preceding the publication of Sweeney's book was Irving Fisher. Not only did Fisher make an important contribution to the theory of income measurement but he was also the leading pioneer in North America of the use of index numbers to stabilise the currency. He makes innumerable appearances in footnotes in the Zeff volume (e.g. Middleditch refers to *The Purchasing Power of Money*, 1911, and Sweeney's essay on 'Income' refers extensively to *The Nature of Capital and Income*, 1906), and his pervasive influence is clear, although none of his extensive work is reprinted here. The reason for this is probably that Fisher was primarily an economist who wrote mainly about economists' problems, such as the control of inflation, rather than its implications for accounts, although he had a serious interest in accounting and was concerned with many problems (such as the nature of capital and income) which are of mutual interest to economists and accountants. The most effective application of Fisher's ideas to accounting was made not by Fisher himself but by his disciple John B. Canning in *The Economics of Accountancy* (1929). Professor Zeff acknowledges that 'No review of important American writings on asset valuation and income measurement during the period 1918–1935 would be complete without at least an acknowledgement of the landmark treatise by John B. Canning'. It is therefore particularly apt that Canning's book has been reprinted in the same series and in the same year as Sweeney's book.

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[11] For an interpratation of the recent inflation accounting debate in this vein, see Michael Mumford, 'The End of a Familiar Inflation Accounting Cycle', *Accounting and Businesss Research*, Spring 1979, pp. 98–104. Sweeney himself commented upon developments in inflation accounting after 1936 and gave an account of his own subsequent career in 'Forty Years After: Or Stabilized Accounting Revisited', pp. xvii–xxxix of the 1964 reissue of *Stabilized Accounting*, Holt, Rinehart and Winston, New York, 1964.

Canning's book is different in almost every respect from Sweeney's. Reading the two, one could almost be forgiven for thinking that the problems of asset valuation and income measurement were entirely divorced from those of inflation accounting. Canning is concerned primarily with the problem of valuation, and possibly the only issue on which he and Sweeney would have agreed without reservation is a common concern (typical of the period) with the balance sheet as the most important financial statement (Canning refers to the balance sheet as 'the major end-product of accounting' (p. 179)). He was much influenced by Irving Fisher and (unlike Sweeney) regarded Fisher's theoretical framework as appropriate for the evaluation of accounting practice. He nowhere discusses inflation or price indices and (again in clear contrast with Sweeney) is remarkably complacent about the stability of the United States economy. On p. 325 he discusses 'The Apparently Increasing Stability of Enterprise Operations', and it should, perhaps, be borne in mind that his Preface is dated September 10, 1929; the Wall Street Crash was on 24 October 1929. Canning's solutions to the valuation problem were based upon a central concern with the assessment of realisable values, whereas Sweeney, as we have already seen, preferred replacement cost as the appropriate current value. However, too much should not be made of this particular contrast, because both Canning and Sweeney were pragmatic in their practical recommendations, and Canning's argument about those assets, usually fixed assets, which have to be valued 'indirectly' (i.e. by some imputation of the value of their future contribution to the joint production of the firm) led him to argue in terms of what he called 'opportunity differences' (which Wright),[12] much later, but acknowledging his debt to Canning, described as 'opportunity values', and which Bonbright[13] described as 'value to the owner') for the adoption of replacement cost as an upper limit to value.

There is also a difference in style between the two books, which is reflected in their different lengths, Canning's being almost twice as long as Sweeney's. Canning's style is rather florid and he makes little use of numerical examples, there not being a single profit and loss account or balance sheet in the whole book, whereas Sweeney is economical and direct in his exposition and his work is illustrated with copious and thorough numerical examples. More surprisingly, Canning, the economist, emphasises an inductive approach, much of his study arising from a detailed study of accounts: 'My chief reliance has been placed upon actual specimens of accountants' work whether published or privately circulated. Many thousands of these have been examined'. Sweeney, on the other hand, relies more obviously on deduction, since he is concerned to devise a new system rather than rationalising the existing one. Finally, Canning does not refer to any published work by Sweeney and Sweeney does not refer to Canning (for example, he refers to Bonbright rather than Canning when arguing for replacement cost valuation of fixed assets), although his book was published seven years later than Canning's.

Despite, or perhaps because of, these sharp contrasts, there can be no doubt that Canning's book, like Sweeney's, represented an important step forward in accounting thought and can still be read with benefit by those concerned with current developments in the subject, although it is not easy reading. The style of the early chapters is comparable with that of a lengthy Victorian novel. After a short introduction chapter on The Academic Status of Accountancy, the contents of which suggest that little has changed since 1929 ('It was not to be expected that the quality of instruction and writing should keep pace with the increasing quantity of work offered'), Canning launches into a six-chapter critique of contemporary accounting practice, based upon his own studies. There is a great deal of logic-chopping and semantics, but this was no doubt useful in its historical perspective. The most important conclusion to emerge from it is that accounting practice does deal with problems of valuation, implying judgements about the present and the future (especially in 'valuation accounts' such as the depreciation provision), and not merely with the slavish reporting of past transactions at historic cost, as might be inferred from some contemporary writings about accounting. In the remainder of the book, Canning discusses possible improvements in accounting practice on the assumption that the accountant is primarily concerned with forward-looking valuation, and it is this change in time-orientation from backward-looking to forward-looking which is his fundamental contribution to accounting thought, although many other things follow from it.

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[12] F. K. Wright, 'Towards a General Theory of Depreciation', *Journal of Accounting Research*, Spring 1964, reprinted in R. H. Parker and G. C. Harcourt, *op. cit.*

[13] J. C. Bonbright, *The Valuation of Property*, McGraw-Hill, New York, 1937, Vol. 1, Chapter 4.

In Chapter VIII, Canning turns to the theory of income, summarising Fisher's analysis and comparing it with the accountant's. He concludes that the accountant's assessment of an individual's 'final objective income' (i.e. living expenses) is entirely consistent with that of Fisher, but the accountant's measurement of business income is closer to what Fisher terms 'earnings'[14] (i.e. consumption plus increases in wealth). Canning concludes that the proper assessment of earnings is a central purpose of accounting '... for every major purpose for which information about enterprise income is wanted the earning figure is more immediately significant than is the figure for realized income.' (p. 170). The fact that Fisher approved of this (publishing a laudatory article on *The Economics of Accountancy* in *The American Economic Review*, 1930), suggests that Sweeney's attack on Fisher's definition of income was misplaced, since Fisher accepted that 'earnings' were more relevant than what he called 'income' for reporting the economic progress of a continuing business. The following chapter goes on to discuss financial position and the accountant's problems of valuation for use in the balance sheet. The purpose of these valuations is seen as being to express the present value of future income (defined in Fisher's sense) arising from the individual assets. For some assets, such as trade debtors or inventories, 'direct valuation' is possible, i.e. assessment of the present value of the cash likely to flow from their disposal, or what Professor Chambers[15] (in some respects an intellectual successor to Canning) would call a 'current cash equivalent'. For other assets, notably fixed assets, the jointness of production means that no simple direct valuation is possible and resort must be had to 'indirect' methods of valuation. Goodwill is recognised as something entirely separate from the value of individual assets; it is the difference between the present value of the whole enterprise (calculated ideally by discounting its future income stream in the Fisherian manner) and the sum of the individual asset values.

The remainder of the book is devoted to a detailed consideration as to how this ideal valuation scheme might be implemented in practice. Canning is very sensitive to the practical problems facing accountants, particularly those of forecasting an uncertain future, and he is prepared to recognise that historic cost may serve as the best available means of valuation in certain situations. On a number of occasions, he points out the virtues of reporting the results of a variety of methods of valuation, as a means of serving the needs of different users and uses, and of dealing with the problems of uncertainty. In this respect Professor Chambers is certainly not an intellectual successor of Canning.

Canning's main contribution to valuation is the advocacy of the 'opportunity difference' principle for indirect valuation, i.e. valuing the asset in terms of the minimum cost of replacing its services, on the assumption that the services are essential to business operations and that it is economically worthwhile to continue operating. The author emphasises that it is the *service*, not the physical object, whose replacement cost should be calculated: this arises logically from regarding the value of the asset as the present value of its future returns. If the future returns have declined in value because the asset is no longer the cheapest method of providing the services, we should value the asset at the cost of its cheapest adequate substitute. It may seem from this that Canning was advocating the use of 'value to the firm' as a general asset valuation basis in the manner in which it is used in Current Cost Accounting. However, this is not quite the case, because Canning is clear that, where a 'direct valuation' is available, he would prefer to use it. When the best use of an asset was to sell it and its Net Realisable Value was ascertainable, e.g. in the case of stocks, Canning would choose to value at net realisable value. For assets to be held in the business he would use present value if it were available. His fundamental criterion of valuation is to establish the present value of the future cash flows which are likely to be obtained from the asset, either by sale or by use in the business, and 'opportunity value' is a second-best alternative when such values are unavailable. Nevertheless, it is clear that Canning did influence Bonbright, as his book is referred to a number of times in *The Valuation of Property*,[16] and Bonbright in turn has had a strong influence on the evolution of Current Cost Accounting.[17]

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[14] Irving Fisher, *The Nature of Capital and Income*, Macmillan, New York, 1906, Chapter 4.

[15] R. J. Chambers, *Accounting Evaluation and Economic Behavior*, Prentice-Hall, Englewood Cliffs, 1966.

It should also be noted that Canning's application of 'opportunity value' precludes valuing the individual asset at present value, because he resorts to opportunity value only when it is impossible to calculate present values of individual assets, either because of the difficulty of estimating future cash flows or because of the impossibility of attributing them to specific assets involved in a joint productive operation. He uses only aggregate present value in this situation, to test the economic worthwhileness of the whole joint operation. If the whole operation is worthwhile (i.e. present value of future net operating inflows exceeds scrap value of the whole concern, where scrap value includes 'conversion value', which is Canning's term for sale value for an alternative use), and the service provided by the asset is essential, then he values at replacement cost of the service. If the operation is not worthwhile, then the assets should be valued as scrap, which, as noted above, embraces 'conversion value', and can therefore be regarded as a form of net realisable value.

The other important contribution which is made in the later chapters of Canning's book is in the chapters on depreciation. This work has subsequently been taken up and developed by Wright and others. His main concern is that depreciation should be allocated to periods according to the amount of services rendered, not according to some arbitrary time pattern, such as straight line (or such as reducing balance, about which he is particularly scathing: 'Its chief usefulness seems to be to furnish drill in the use of logarithms for students in accounting'). He ignores the interest element, on pragmatic grounds, although he realises that an interest charge would be theoretically more elegant (adjusting for interest 'is as absurd as trying to correct for the earth's rotation in a snowball fight'). More importantly, he limits his analysis to conditions in which the value of a service unit is the same throughout the life of the asset, and does not discuss the effects of changes in prices, costs and technology. For example, he might have been a little less scathing about the reducing balance method if he had considered it as a pragmatic modification of the straight line method to allow for probable deterioration in the value of the asset's services as cheaper methods of providing the services became available (e.g., because of relative changes in the prices of factors of production).

In summary, Canning's approach to accounting theory was revolutionary in its time, involving a change from the traditional view of the accountant as a recorder of historical facts to an economist's view of the accountant as a forward-looking valuer of a firm's assets and an assessor of its current economic progress. Moreover, the book contains many ideas which have been developed further and are still relevant. For example, his use of 'opportunity values' is much clearer in its objectives and more sensitive to the limitations and assumptions of the approach than are some more recent writings on 'value to the firm' such as the Sandilands Report.[18]

Canning's book does have some serious faults, especially from the point of view of the present-day reader. His florid style has already been referred to, as has his lack of comprehensive numerical examples. He is vague on some aspects of the income statement, concentrating on valuation for balance sheet purposes. In particular, we are left in doubt as to his capital maintenance concept and as to how he would treat the various asset valuation changes which would inevitably take place between balance sheets. For example, we are given a tantalising glimpse of his view of the calculation of cost of goods sold, but this is not explained, developed or illustrated: 'In the income statement the cost valuation is obviously the figure to employ in establishing the figure for 'cost of goods sold'. The difference between cost and carrying value should be given effect as an independent item of gain (or loss)' (p. 226). Since he believes that the assessment of earnings is vital to the assessment of the progress of the business and to the valuation of goodwill, his failure to specify clearly his ideal income statement is a serious deficiency. Finally, there is no discussion of inflation and how this might affect the accounts.

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[16] For example, footnote 18, p. 79, in Bonbright's chapter on value to the owner.

[17] See the *Report of the Inflation Accounting Committee* ('The Sandilands Report') HMSO, London, 1975, p. 58.

[18] A recent critique of the Sandilands Report's use of Deprival Value, which owes something to Canning's ideas, is 'Interaction Effects in CCA Valuation' by K. V. Peasnell, *Accounting and Business Research*, Spring 1978, pp. 82–91.

These criticisms are, however, made from the point of view of the present day, rather than half a century ago, when Canning was writing. His work was certainly a major original contribution to accounting thought and deserves to stand with Sweeney's as a classic of its period.

4. Conclusion

At the beginning of this review, it was suggested that accounting thought might have made little progress, particularly in the area of inflation accounting, and that early writers might have had some valuable insights which have been forgotten or overlooked.

With regard to the first suggestion, it is salutary to learn how much the writers of half a century ago did know. On the other hand, progress has been made, even if the pace leaves something to be desired. Various models have been developed and refined and their assumptions clarified. For example, the literature exploring the relationship between accounting information and various types of users' needs has developed considerably since Daines' tentative suggestions and Canning's broad plea for 'special purpose' accounts, of 1929. It is in the area of practice that progress has most obviously been disappointing: professional bodies are still struggling with problems of inflation accounting which would have seemed trivial to Sweeney and depreciation methods are still usually mechanical rules despite Canning's incisive critique.

With regard to the second suggestion, the reviewer discovered no forgotten pearls of wisdom in the three books reviewed here. The probable explanation for this is that the two books are recognised as classics, and the collection of papers is derived from leading journals, so that the material has already been carefully sifted and the worthwhile ideas taken up. The more obscure journals and the lesser-known writers might be a more promising area for discovering hidden pearls, but one suspects that this would be a laborious and unrewarding search. Perhaps a more realistic motive for reading earlier writers is not to rediscover forgotten truths, but to gain a perspective of how present-day ideas have evolved and, perhaps, by reading the original statements of important ideas, to see them more vividly and understand them more clearly. For the latter purpose, all three of these books can be recommended strongly.

British Capital Accounting Practices and Business Finance 1852–1919: An Exemplification[1]

J. R. Edwards

The Shelton Bar Iron Company was formed in 1852. Authoritative sources record that the company was the creation of the second Earl Granville.[2] This was not so, although it is true that Granville was the main instigator in developing the iron industry in North Staffordshire, and the Shelton Collieries and Ironworks, of which he was the sole proprietor, pre-dates 'Shelton Bar'. His application to join with the founding proprietors of the latter company was considered at a meeting held on 13 July 1852[3] when it was resolved that 'his Lordship be admitted a partner as from the commencement of the undertaking' as the holder of six shares in the firm. From 1855 Granville occupied the chair at partners' meetings. By 1870 the company owned the largest ironworks in North Staffordshire[4] and Lord Granville was its principal proprietor. In 1886 the company was incorporated, with limited liability, as the Shelton Iron and Steel Co. Ltd. and three years later the Shelton Iron, Steel and Coal Co. Ltd. (SISC) was formed to acquire both that undertaking and Lord Granville's Shelton Collieries and Ironworks.[5] Granville was the first Chairman of the new company.[6] In 1920 SISC was converted to the status of a private company following purchase of its share capital by John Summers & Sons Ltd.

During the period 1852–1919 major changes occurred within the iron and steel industry. Companies which depended upon iron for their main source of revenue in the 1850s either extended their range of activities into areas such as mining and steel making or accepted a rapid decline in fortune. A concurrent and consequential development was the increasing adoption of joint stock company status so as to obtain access to sources of finance for the heavy expenditure associated with sinking pits, constructing steelworks and undertaking the modifications and improvements necessitated by the rapid technological advance within the industry. It was also a period during which the accounting function underwent significant development. The increasing size of the business unit and the growth of the capital market stimulated the development of reporting procedures both within the firm and to outsiders. Indeed Yamey has suggested that many of the conventions on which accounting reports are based originated during the second half of the nineteenth century.[7] Furthermore it has been argued that whereas at the beginning of the period being examined British accounting practice consistently overestimated profitability,[8] by the 1920s conservatism and understatement had become dominant features in financial reporting.[9]

The fact that it was a time which also saw the introduction of the statutory external audit[10] and the obligation to present an annual balance sheet to the Registrar of Companies for filing as a public document[11] adds to its claims as being a period worthy of investigation. It is probably true to say that although these and other events have attracted the attention of accounting historians their investigations have centred on text-books, articles and government reports surviving from this time and the accounting records of contemporary companies, which still exist today, remain substantially unexplored.

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[1] The accounting records used for this investigation are located at The British Steel Corporation, North Western Regional Records Centre (NWRRC), Shotton Works, Deeside, Clwyd.

[2] *The Victoria History of the Counties of England, Stafford*, vol. 2, p. 121. The second Earl Granville was, of course, one of Britain's leading statesmen during the second half of the nineteenth century. One of his less well known appointments was to the office of Commissioner of Railways, 1847-51; in 1850 he presented to Parliament proposals for an independent audit of railway companies.

[3] Shelton Bar Iron Company (SBI) minute book, 1852–86, NWRRC/472/3/1.

[4] *Railway and Commercial Gazette*, 29 October 1870, no, 1836, vol. 40.

[5] Prospectus dated 12 December 1889, book 26, fo. 1, NWRRC/472.

[6] Granville died soon afterwards, March 1891.

[7] B. S. Yamey, 'The Development of Company Accounting Conventions', *Three Banks Review*, vol. 47, 1960, p. 22.

[8] R. P. Brief, *Nineteenth Century Capital Accounting and Business Investment*, Arno Press, 1976.

[9] H. B. Samuel, *Shareholders' Money*, Pitman, 1933, pp. 269–97.

[10] Companies Act, 1900, 63 & 64 Vict., ch. 28, s. 21.

The present analysis, based on the records of the Shelton companies, has as its purpose to examine the effect on profit measurement of procedures employed to account for capital expenditure. In this context particular attention will be focussed on the profit figures reported[12] to the shareholders and debenture holders of SISC between 1890 and 1919. The implication of capital accounting procedures and reporting practices for the sources used to finance business activity will also be explored. It is hoped that the analysis presented below adequately demonstrates the proposition that accounting procedures followed at Shelton were those best suited to the fulfilment of managerial goals rather than those which might have been regarded as representing best available practice or even as reflecting an awareness of the virtue of consistency in financial reporting.

Contemporary attitudes towards depreciation

As a preliminary exercise it is illuminating to consider a selection of the views expressed by contemporary writers regarding the significance for profit measurement of using capital assets as part of the basis for productive activity. There were three aspects to the debate: was it necessary to make a charge against revenue to reflect the diminishing value of fixed assets? if so, in what way? and how much? By the beginning of this century the first question had been answered in the affirmative according to certain authoritative sources. In Dicksee's view:

> ... no true profits can be shown until after Revenue has been charged with a sum sufficient to cover such Depreciation as has actually *occurred* during the period under review.[13]

The idea, popular in some quarters, that the depreciation charge might be varied depending on profit levels receives equally unequivocal treatment from Lowes Dickinson:

> ... there is continually in progress in the case of all property except land a waste due to the use of these properties for the purpose of earning Profits ... this waste must be provided for out of the resulting Profits, or if there have been no profits, the Losses are really so much more by the amount of waste resulting from the operations.[14]

If we turn to the practices followed by business firms it appears that as early as 1880:

> Every cautious trader writes off an annual percentage according to the average wear and tear or depreciation.[15]

In view of the difficulties caused by a number of legal decisions reached in the years that followed it is interesting to find Jessel, M. R. expressing similar sentiments a year earlier in *Davison v Gillies*:

> I should think no commercial man would doubt ... that he must not calculate net profits until he has provided for all ordinary repairs and wear and tear occasioned by his business —in many businesses ... there is a regular sum ... set aside for this purpose.[16]

This strong measure of agreement regarding the necessity of a charge to reflect depreciation may, however, be contrasted with the controversy continuing to surround the nature and volume of the deduction to be made. According to Dicksee it is here that scope remained for management wishing to inflate profits but aware of the futility of arguing that depreciation of assets does not occur:

> Their line of argument lies rather in the direction of attempting to persuade their hearers that, under the particular circumstances there obtaining, a *direct* charge for depreciation is unnecessary, because such provision as might

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[11] Companies Act, 1907, 7 Edw. 7, ch. 50, s. 21. The usefulness of this provision was undermined by the failure to specify a current balance sheet as this allowed the same document to be filed each year: Report of the Company Law Amendment Committee, 1925, cmd. 2657, para. 70.

[12] Article 145(3), Memorandum and Articles of Association of SISC, book 26, NWRRC/472.

[13] Lawrence R. Dicksee, *Depreciation, Reserves, and Reserve Funds*, Arno Press, 1976, p. 2, reprint of the 1903 edition published by Gee.

[14] Arthur Lowes Dickinson, 'The Profits of a Corporation', *Proceedings of the First International Congress of Accountants*, New York, 1904, p. 171 at p. 176.

[15] 'Income Tax' *Accountant*, vol. 6, 10 April 1880, p. 5.

[16] 50 LJ (Ch.), p. 192 at p. 193.

> under normal circumstances be proper in this connection is in that particular instance provided by other means.[17]

The practice of charging repairs and renewals against revenue as an alternative to depreciation (this and other devices were employed at Shelton) was quite common in the nineteenth century, particularly amongst public utilities. The underlying argument that it was unnecessary to charge depreciation in view of the fact that the asset remained in perfect working order, however, met with growing criticism.[18] And even where the nature of the asset did permit continuous rejuvenation the argument for a depreciation charge in anticipation of ultimate obsolescence remained unanswered.

Naturally not all businessmen welcomed this gradual application of the matching concept to fixed asset expenditure. Many firms preferred to retain a significant element of discretion in this matter, particularly when profits were low.[19] There is evidence to suggest that many businessmen accepted only slowly and reluctantly the apparently widely held views regarding the need to charge depreciation. Leake, writing as late as 1923, reports that:

> previously incurred capital outlay which has expired within the year... is at present grievously neglected in accounting.[20]

This was certainly true at Shelton where the methods employed to account for the significant capital outlay associated with iron and steel making[21] can best be described as extremely haphazard. Perhaps the capital accounting procedures employed at Shelton were atypical. This is a possibility and further investigation of primary documentation is needed in order to establish more firmly the degree of correspondence between theory and practice.

In an attempt to underline the case for charging depreciation some commentators focussed their attention on the possible consequences of an inadequate write off:

> You cannot separate the question of depreciation from profits. The probability is, although you say a man's profits fall off because of markets, that they really fell off because he did not get the new machinery which he ought to have got; and he did not get that because he had not written enough off.... [22]

That an inadequate depreciation charge was an important cause of business failure was a widely held view. We shall see, however, that the absence of a depreciation charge, and even the absence of profit over a significant time period, need have no disastrous repercussions provided steps are taken to ensure cash inflows continue to exceed cash outflows.

Accounting for capital expenditure 1852–1889

The formation of SISC in 1889 is a convenient dividing line for the purpose of examining the procedures employed at Shelton. Financial data concerning this early period are scarce. We are told that the company began with a capital of £12,000[23] and was soon heavily dependent on bank credit.[24] Profits were low and additional capital expenditure was financed by making calls on partners in relation to the number of shares held in the undertaking. Perhaps the two most significant features of the capital accounting practices employed during the period 1852–1889 were:

(i) A book equivalence between the total balance on partners' capital account and the amount debited to plant account.

(ii) The lack of any reference to depreciation.

The balance sheet for 31 December 1862[25] shows the partners' capital account totalling £49,500 and an equal amount debited to plant account. Whether correspondence between the two totals existed from the outset cannot be ascertained, due to the absence of primary data, but it is a possibility in view of the policy of recording retained profits separately in the balance sheet rather than splitting them between the partners as is common practice today. The evidence is there to show that the partners had previously decided to reduce the plant account balance to £49,500[26] but this resolution may have been put into effect by debiting the excess to profit and loss account. On the other hand the decision to write the 1863 revaluations of plant at £50,000[27] into the books and credit the surplus arising to the partners does give some support to the idea of an intended link between the two accounts. During the nineteenth century, and later, the term capital was used not only to describe the proprietors' investment but also to describe expenditure on fixed assets.[28] Consequently, although it would demonstrate a misunderstanding concerning the accounting significance of the term capital, it would not be surprising to discover that the owners of the Shelton Bar Iron Company took the view that capitalised expenditure could come only from capital sources, defined as the partners' investment in the firm.

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[17] *Depreciation, Reserves, and Reserve Funds*, p. 2.

[18] Richard P. Brief, 'The Origin and Evolution of Nineteenth-Century Asset Accounting', *Business History Review*, vol. 40, no. 1, 1966, p. 1 at pp. 7–8.

[19] Richard P. Brief, 'Depreciation Theory in Historical Perspective', *Accountant*, vol. 163, 1974, p. 737 at p. 738.

[20] P. D. Leake, *Depreciation of Wasting Assets and their Treatment in Computing Annual Profit and Loss*, Gee, 4th edition 1923, p. 9.

[21] Iron and steel was the first manufacturing industry to require capital expenditure on a sufficient scale to stimulate the widespread adoption of joint stock company status.

[22] Arthur Chamberlain in evidence to the 1904 Income-Tax Committee, quoted in Hartford H. Montgomery, 'Depreciation of Buildings, Machinery, and Plant, in Reference to Accounts and Income Tax' *Accountant's Magazine*, vol. 12, 1908, p. 313.

[23] SBI minute book, 1852–86, 24 February 1852, NWRRC/472/3/1.

[24] Ibid., 18 April 1854.

[25] Ibid., attached to report of meeting 20 April 1863.

This book equivalence between capital receipts and capital expenditure lasted only until the latter part of 1864 when the firm began to construct a new forge and mill at Etruria.[29] The outlay which is shown separately in successive balance sheets grew to a figure of £48,953 by 1867 and afterwards remained virtually unchanged until the company was dissolved in 1886. The only other material capitalisation occurred between 1880–82 resulting in a balance sheet total of £4,705 described as the 'Shelton Works New Bar Mill'.[30] For each of the three fixed asset groups, 'Plant Account', 'Etruria Forge and Mill', and 'Shelton Works New Bar Mill', the procedure appears to have been to capitalise the initial outlay and then close the capital account and write all further expenditure off to revenue: an accounting practice which was not uncommon amongst railway companies in the mid-nineteenth century.[31]

Accounting for capital expenditure 1890–1919

The formation of SISC added the dimension provided by the existence of absentee shareholders and providers of long term loan finance to the reporting procedures employed at Shelton. A typical set of published accounts, for the year 1899, is reproduced as Table 1.[32] The main modifications made to the company's reporting practices during the thirty year period culminating in the Summers' takeover are discussed below and illustrated by reference to Table 1.

Reported Profit

An interesting insight into the significance that management attached to certain items appearing in the profit and loss account is obtained by referring to the directors' report on the accounts for 1899:

> The result of the working of the Company for the year is a profit of £53,709.12s.0d., which added to the balance of £5,500.17s.5d. brought forward from 1898, gives £59,210.9s.5d. to the credit of Revenue Account.
>
> Of this sum £12,500 is required for the service of the first and second Debentures, £10,000 has been charged to Depreciation, £10,000 has been placed to the General Reserve Account, and £3,000 has been written off the cost of issue of the Second Debentures, leaving a balance of £23,710.9s.5d. to the credit of Profit and Loss Account.
>
> From this amount the Board recommends a dividend of Seventeen Shillings per share on the Preference Shares, being eight and one-half per cent. thereon, and leaving £6,710.9s.5d. to be carried forward to the next account.[33]

The £53,709.12s.0d. designated profit in the directors' report does not appear as a separate item in the accounts. In order to achieve this total it is necessary to re-classify the data contained in the profit and loss account set out in Table 1:

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[26] Ibid., undated minute following minute dated 2 October 1861.

[27] Ibid., 2 October 1863. The valuation was made by one of the partners.

[28] The term capital, initially used by accountants to describe the proprietor's investment, was first used also to mean the firm's assets by Adam Smith, *Wealth of Nations*, book 2. In Edwin Cannan's view 'it is certain that if he [Smith] had either not made the change or had explained clearly that he was making it, much subsequent confusion would have been avoided', 'Early History of the Term Capital', *Quarterly Journal of Economics*, vol. 25, 1921, p. 469 at p. 481. Perhaps the treatment at Shelton was one minor result of the confusion caused. A further explanatory factor might be found in the practice of public utility companies to publish statements of capital receipts and payments long before the Double Account system was prescribed for public utility companies, beginning with the railways in 1868.

[29] SBI minute book, 1852–86, 6 May 1864. The estimated cost of £25,000 was exceeded by nearly 100%.

[30] Ibid., 9 March 1880.

[31] Seymour Broadbridge, *Studies in Railway Expansion and the Capital Market in England, 1825–1873*, Frank Cass, 1970, pp. 39–40. H. Pollins, 'Aspects of Railway Accounting before 1868', in *Studies in the History of Accounting*, edited by A. C. Littleton and B. S. Yamey, Sweet and Maxwell, 1962, p. 332 at pp. 349–51.

[32] A directors' report was attached to the accounts each year.

[33] Book 23, fo. 38, NWRRC/472.

Profit & Loss Account for the Year ended 31st December, 1899

	£ s d	£ s d
Balance of Gross Profit, after providing for bad debts.		61,470.10.8
Less: Rates and Taxes	6,605.18.8	
Directors' and Trustees' Fees	1,155. 0.0	7,760.18.8
Profit		53,709.12.0
Less: Depreciation	10,000. 0.0	
General Reserve	10,000. 0.0	
Part cost of issue of Second Debentures.	3,000. 0.0	23,000. 0.0
Balance to balance sheet		£30,709.12.0

Although described as a charge in the directors' report it seems fairly clear that management perceived the deduction for depreciation as an appropriation of profits rather than as a cost of carrying on business activity. Finance charges were regarded in a similar light and in that case the deduction appears on the face of the balance sheet. One possible explanation, though not a justification for this treatment, is that depreciation and finance charges in common with items today conventionally deducted in the appropriation account have links with capital items appearing in the balance sheet.

Depreciation

No consistent method of accounting for capital expenditure was employed between 1890 and 1919. Deductions for depreciation were made from time to time. An examination of the evidence, however, suggests that the decision to make a deduction was based on external reporting objectives[34] rather than the reality of depreciation, whilst the amount of the deduction depended on the level of profits rather than the extent of the depreciation. An examination of the data contained in Table 2 reveals the existence of a causal relationship between the level of profit and the amount of depreciation charged[35] throughout the period, 1890–1904, during which management depended heavily on its ability to raise additional external finance in order to enable the continuance of business activity at Shelton. In each of the years 1891 and 1892 expenditure including transfers to the debenture sinking fund exceeded revenue (see column G for residual figure) and no depreciation was charged. In 1894 the results permitted a deduction of £2,600 and a retained profit for the year of £265. In the next year outflows exceeded inflows and no depreciation was charged. From 1896 to 1900 results improved and deductions were made but in 1901 the combined effect of the trade depression and fires at the company's collieries[36] caused substantial losses and the practice of charging depreciation was abandoned once again.[37] It seems unlikely that management was unaware of the fact that plant was depreciating and that the reduced value should be recorded in the accounts. Indeed all the evidence is to the contrary. In view of the poor results achieved during the first two years of trading, the company 'called in the services of eminent experts connected with the Coal and Iron Trades to fully report on the various departments'.[38] Jeremiah Head, MInstCE, of Middlesbrough, investigated the company's affairs and produced a document which deals extensively with both technical and financial matters. The three part report, dated 2nd March 1892, runs to 82 pages plus an index. The section headed 'Balance Sheets and Depreciation' reports that in view of the failure to provide adequate depreciation 'I do not think that the last [Balance] Sheet can be said to represent accurately your true pecuniary position.'[39]

A sub-section entitled 'Object of Depreciation Funds and their disposal' reads as follows:

> The object of depreciation funds should be either to reduce liabilities or augment assets; so that the balance Sheets of a concern may at all times accurately represent its affairs. The

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[34] See section entitled 'Financing Business Activity'.

[35] An accounting practice described by F. W. Pixley as 'thoroughly unsound', *Accountancy*, Pitman, p. 204.

[36] Directors' report on the 1901 accounts, book 23, fo. 47, NWRRC/472.

[37] No further charges described as depreciation were made until 1929, SISC private ledger 1917–45, fo. 205, NWRRC/472.

[38] Directors' report on the 1891 accounts, book 23, fo. 16, NWRRC/472.

[39] *Report on the Iron & Steel Works of the Shelton Iron, Steel & Coal Company Limited*, by Jeremiah Head, Part III, p. 17, NWRCC.

TABLE 1

THE SHELTON IRON, STEEL & COAL COMPANY LIMITED

BALANCE SHEET, 31st December, 1899.

Dr.

		£	s	d	£	s	d
To	Share Capital Authorised:						
	20,000 Seven per cent. Cumulative Preference Shares of £10 each	200,000	0	0			
	30,000 Ordinary Shares of £10 each	300,000	0	0			
	50,000	£500,000	0	0			
„	Share Capital outstanding:						
	20,000 Seven per cent. Cumulative Preference Shares of £10 each, fully paid	200,000	0	0			
„	21,996 Ordinary Shares of £10 each, fully paid	219,960	0	0	419,960	0	0
	41,996						
„	Five per cent. First Mortgage Debentures	81,300	0	0			
	Drawn for Payment 1st January, 1900	2,500	0	0	78,800	0	0
„	First Debenture Sinking Fund				19,525	0	0
„	Six per cent. Second Mortgage Debentures				100,000	0	0
„	Sundry Creditors, Bills payable, &c.				66,172	2	3
„	Suspense Account, 31st Dec. 1889				2,035	5	1
„	General Reserve Account	7,000	0	0			
„	Added this year	10,000	0	0	17,000	0	0
„	PROFIT AND LOSS.						
	Balance from 31st December, 1898	5,500	17	5			
	Balance of Profit for year 1899	30,709	12	0			
		36,210	9	5			
	Less First Debenture Interest and Sinking Fund, and Second Debenture Interest—1899	12,500	0	0	23,710	9	5
					£727,202	16	9

Cr.

		£	s	d	£	s	d
By	Freehold and Leasehold Properties, Fixed Plant, Machinery, Rolling Stock, &c., as per last Balance Sheet	520,117	14	10			
	Additional Outlay on Colliery and Works (*less* Sales of old material)	44,204	18	6			
		564,322	13	4			
	Less Depreciation	10,000	0	0	554,322	13	4
„	Stocks of Iron, Steel, Coal, Ironstone, Materials, Stores, &c.				96,285	8	2
„	Sundry Debtors, *less* reserve for Bad and Doubtful Debts				72,828	1	11
„	Expenses on Issue of 6% second Mortgage Debentures, including Cost of Stamps, &c.	6,766	13	4			
	Written off	3,000	0	0	3,766	13	4
					£727,202	16	9

NOTE: The Balance of Dividend accrued to date, on the seven per cent. Preference Shares, constitutes a first charge on profits available for distribution, after the Interest and Sinking Fund upon Debentures has been provided.

PROFIT and LOSS ACCOUNT for the Year ended 31st December, 1899.

	Dr.	£	s	d		Cr.	£	s	d
To	Rates and Taxes	6,605	18	8	By	Balance of Gross Profit, after providing for bad debts	61,470	10	8
„	Directors' and Trustees' Fees	1,155	0	0					
„	Depreciation	10,000	0	0					
„	General Reserve	10,000	0	0					
„	Part cost of issue of Second Debentures	3,000	0	0					
„	Balance as above	30,709	12	0					
		£61,470	10	8			£61,470	10	8

We have examined the books and accounts to December 31st, 1899, and approve the above Balance Sheet.

DELOITTE, DEVER, GRIFFITHS & Co., *Auditors,*
Chartered Accountants.

26th March, 1900:

TABLE 2

Profit and Loss Account Data 1890–1919 (Note 1)

Year	*A* *Profit before depreciation (loss)* £	*B* *Depreciation* £	*C* *Balance of profit (loss) (Note 2)* £	*D* *Debentures (Note 3)* £	*E* *Transfer to (from) reserves* £	*F* *Dividends (Note 4)* £	*G* *Retained profit (loss)* £	*H* *Balance brought forward* £	*I* *Balance carried forward* £
1890	32,715	—	32,715	6,500	3,000	10,675	12,540	—	12,540
1891	(3,089)	—	(3,089)	6,500	—	—	(9,589)	12,540	2,951
1892	(9,470)	—	(9,470)	6,500	(3,000)	—	(12,970)	2,951	(10,019)
1893	12,519	—	12,519	6,500	—	—	6,019	(10,019)	(4,000)
1894 (Note 5)	9,365	2,600	6,765	6,500	—	—	265	(4,000)	(3,735)
1895	273	—	273	6,500	—	—	(6,227)	(3,735)	(9,962)
1896	25,441	2,400	23,041	6,500	—	5,000	11,541	(9,962)	1,579
1897	32,637	2,000	30,637	6,500	7,000	14,000	3,137	1,579	4,716
1898	19,540	3,000	16,540	9,755	—	6,000	785	4,716	5,501
1899	50,710	10,000	40,710	12,500	10,000	17,000	1,210	5,501	6,711
1900 (Note 6)	59,212	10,000	49,212	12,500	20,000	14,000	2,712	6,711	9,423
1901	(4,130)	—	(4,130)	15,750	(11,000)	—	(8,880)	9,423	543
1902	(954)	—	(954)	15,750	(17,000)	—	296	543	839
1903	4,055	—	4,055	17,750	(9,000)	—	(4,695)	839	(3,856)
1904	(4,309)	—	(4,309)	24,565	—	—	(28,874)	(3,856)	(32,730)
1905	29,918	—	29,918	37,750	—	—	(7,832)	(32,730)	(40,562)
1906	51,362	—	51,362	37,750	—	—	13,612	(40,562)	(26,950)

1907	77,085	—	77,085	37,750	—	—	39,335	(26,950)	12,385
1908	31,615	—	31,615	37,750	—	—	(6,135)	12,385	6,250
1909	38,033	—	38,033	37,750	—	—	283	6,250	6,533
1910	40,608	—	40,608	37,750	—	—	2,858	6,533	9,391
1911	38,035	—	38,035	37,750	—	—	285	9,391	9,676
1912	63,496	—	63,496	40,000	—	24,000	(504)	9,676	9,172
1913	81,185	—	81,185	40,000	10,000	22,200	8,985	9,172	18,157
1914	63,466	—	63,466	40,000	—	22,200	1,266	18,157	19,423
1915	109,554	—	109,554	40,000	20,000	26,640	22,914	19,423	42,337
1916	151,237	—	151,237	40,000	30,000	55,800	25,437	42,337	67,774
1917	135,958	—	135,958	40,000	40,000	55,800	158	67,774	67,932
1918	132,488	—	132,488	40,000	25,000	55,800	11,688	67,932	79,620
1919	139,088	—	139,088	38,154	25,000	75,000	934	79,620	80,554

Notes:

1. The depreciation figures (column B) are taken from the profit and loss accounts attached to the balance sheets. Column A figures do not appear in the accounts and have been obtained by adding back depreciation to the column C figures. Column C figures usually represent the balances appearing at the foot of the profit and loss account. Appropriations of the 'balance of profit' were either made on the face of the balance sheet or proposed in the directors' report. Exceptions to this general rule occurred in 1899 (see Table 1) and 1900 when the transfers to reserves were made from the profit and loss account.

2. In the years when there was a debit balance at the foot of the profit and loss account it was described as 'loss on working'.

3. The deductions comprise both the annual interest charge on debentures outstanding and transfers to debenture sinking fund account(s) equal to the nominal value of debentures falling due for redemption.

4. Dividends paid in the years 1896–1900 were in respect of arrears on the 7% cumulative preference shares; from 1912 onwards dividends were declared on the reorganised ordinary share capital.

5. The £9,365 includes £3,150 representing an 'appreciation in the value of 18,000 tons of Tap Cinders'.

6. The £59,212 is after undisclosed transfers to suspense accounts for renewals and for stock of £8,000 and £5,000 respectively. These amounts were written back to profit in the following year when results were poor.

> money set apart for depreciation must not, of course, be used for mere maintenance of the plant in working order. That should be a charge on cost of production. But it should provide for the liability of buildings, plant and machinery/and even the business itself/to *become obsolete in the course of time* although maintained in working order.[40]

Applying a depreciation rate of 2½% to the buildings, plant and machinery belonging to the iron works department and assuming a 33 year life, for the collieries a charge, for 1891, of £10,838[41] is computed. The report goes on to point out that the published loss on working of £3,089 (Table 2) was correspondingly understated.

These proposals were never rigorously applied at Shelton despite a clearly expressed awareness of the relationship between wear and tear and industrial use[42] and of the impact of technological advance on the viability of existing plant.[43]

Repairs and Renewals

Evidence of the way in which management intended to maintain physical capital intact appears in the directors' report attached to the 1893 accounts.

> No charge has been made for Depreciation, but the Company's Plant and Works have been fully maintained out of Revenue.[44]

Much later, during the 1920s, the managing director certified for audit purposes that

> the Buildings, Plant and Machinery of the Company have been kept in good and proper repair and the Works in a state of efficiency out of Revenue.[45]

These representations resemble the certificates which railway companies were obliged to attach to their published accounts by the Regulation of Railways Act 1868.[46] It would therefore seem that, in common with the railways, the idea prevailing within this part of the iron and steel industry was that properly maintained fixed assets lasted indefinitely rendering any charge for depreciation unnecessary. It is here that management appears to have made the error of concentrating its attention on the wrong concept of capital. A properly maintained iron works would last, in physical terms, almost an unlimited time, but its economic worth would depend on its revenue earning capacity. The directors might have been correct in their view that regular repairs and renewals ensured physical capital maintenance but totally wrong in their implied assumption that this guaranteed the continuing viability of the works and the firm as a whole. They should have been aiming at the maintenance of earning capacity rather than physical capacity. It is possible to argue that railway managers made the same mistake but the consequence of this error emerged rather sooner in the iron and steel industry where the rate of technological advance and improvements in the productive processes continued at a rapid pace throughout the period under consideration. Consequently expenditure which compensated for the effect of wear and tear did nothing to stave off the technical obsolescence to which Jeremiah Head had drawn the company's attention. By 1903 the Chairman felt compelled to report that 'the old ironworks need alteration and improvements, and it will be desirable to spend rather more money to carry these out'[47] and later 'the old ironworks... cannot be regarded as up-to-date.'[48] The operation of a regular system for amortising capital outlay might have helped the internal decision making process by (i) drawing attention to the declining profitability of the ironworks, at an early stage, and also the extent of the deterioration, and (ii) earmarking for retention resources equivalent to the historical value of shareholders' capital. It may well be, however, that the failure to record a charge for depreciation is not evidence of ignorant self-deception. An alternative explanation is that the audited accounts 'properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the best of their information and the explanations given to them, and as shown by the books of the Company',[49] were better suited to fulfil management's external reporting objectives.

A major practical problem associated with repairs and renewals accounting is how to allocate expenditure between capital and revenue, i.e.

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[40] Ibid., p. 18.

[41] Ibid., p. 19.

[42] Chairman's report on the 1916 accounts, 'Working as we are under the greatest pressure, the depreciation to plant & machinery has been heavy....', book 23, fo. 104, NWRRC/472. Chairman's report on the 1909 accounts, fo. 67.

[43] Ibid., Chairman's report on the 1907 accounts, 'Science moves very rapidly, and it is absolutely necessary that we should keep the Works up-to-date...', fo. 63.

[44] Ibid., directors' report on the 1893 accounts, fo. 26.

[45] Working papers for final accounts, 1921, NWRRC/472/4/1.

[46] 30 & 31 Vict., ch. 119, first schedule to the Act.

[47] Chairman's report on the 1902 accounts, book 23 fo. 50, NWRRC/472.

[48] Ibid., chairman's report on the 1903 accounts, fo. 53.

[49] Article 145 (2) (b), book 26, NWRRC/472.

between renovation and betterment.[50] Not only does this cause difficulty when measuring profit, it also provides scope for management determined to manipulate reported profit. It is impossible to overstate, or even understate, profit indefinitely due to the ability of actual events, underlying the recorded financial facts, to assert themselves. In the long run compensation must be made. Nevertheless scope for smoothing the trend of reported profit is enormous and there is plenty of evidence that this happened at Shelton. A good example occurred between 1908–11.

The balance sheet at 31 December 1908 shows, amongst the assets, the total £25,264 described as 'Steel Works Extension, Colliery Developments, & c., in Suspense.'[51] Although the words 'in Suspense' might raise a query in the mind of the informed reader there is no indication, either in the directors' or in the chairman's report, that this was anything other than a *bona fide* increase in the value of the firm. The capitalisation is increased to £37,089 in 1909 and it is not until the following year, when an upturn in trading fortunes gained momentum, that the true nature of this item is revealed. The chairman, C. W. Parish, informed those in attendance at the twenty first annual general meeting of the company that:

> ... we have been able to charge Revenue with a large sum representing the cost of *maintenance and Renewals* of Machinery and Plant, and also the Proportions of Development of the Deep Pits. Some of these items were carried forward in Suspense from previous years, but it was necessary to liquidate them as soon as possible....[52]

In fact a reduction of the suspense account to only £27,064 was made in the 1910 accounts, but in the following year the item no longer appears in the balance sheet and the directors' report confirms

> The cost of these additional improvements,[53] which were of the nature of *renewals*, and the Suspense Account shewn in last year's Balance Sheet, have been charged to Revenue.[54]

Debentures

The company made four mortgage debenture issues between 1890 and 1906 amounting in total to half a million pounds. Each of the issues was subsequently redeemed by means of annual drawings and the last repayment was made in 1928. To facilitate this process a fixed annual deduction was made from profits. The deductions covered both the interest due and capital repaid with the former element declining and the latter rising over the redemption period. The intention was to substitute equity for debt finance and the amounts redeemed and deducted from revenue were credited to sinking fund accounts and listed amonst the sources of finance in the company's balance sheet (Table 1) until 1906 when a new method of presentation was introduced. The innovation was described and explained by Parish when addressing the seventeenth annual general meeting:

> In previous years they [the sinking funds] stood on the debit side [of the balance sheet], and thus figured as a liability, which, strictly speaking, they were not, and although this is a frequent practice in Balance Sheets, it has neither the advantage of accuracy nor simplicity.
>
> The Sinking Funds may be used for the purpose of meeting depreciation charges.... Therefore with the approval of our auditors we have eliminated the items of the Sinking Funds of the 1st and 2nd Debentures from the debit side of the Balance Sheets, and have deducted the £51,600 to which they amounted off our capital expenditure....[55]

We do not know whether this amendment to reporting procedures was the work of the directors or the auditors. To the extent that it earmarked for retention resources which could be used to renovate or replace worn out plant it served as a useful surrogate for an annual depreciation charge. Indeed the deduction may have been used to justify the omission of a charge from the accounts. But any close relationship between actual depreciation and the amount credited to the sinking fund accounts would have been coincidental.[56] Furthermore, at no stage were the deductions accounted for as anything other than an appropriation of profits which would otherwise have been available for distribution (Table 1). The fact that, at bottom, the directors saw the deduction as little more than a convenient financial reporting device is revealed in a later remark made by the chairman:

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[50] Richard P. Brief, 'Nineteenth Century Accounting Error', *Journal of Accounting Research*, vol. 3, 1965, p. 12.

[51] Book 23, fo. 64, NWRRC/472.

[52] Ibid., fo. 68 (my emphasis).

[53] At Shelton the term improvement was often used to describe what an accountant would consider renewal or renovation; the only respect in which there was an element of improvement was by comparison with the state of the asset immediately before the expenditure was incurred.

[54] Book 23, fo. 70, NWRRC/472.

[55] Ibid., chairman's report on the 1906 accounts, fo. 61.

[56] The increasing annual amount credited to the sinking fund accounts produced an effect on the balance sheet value of fixed assets similar to the annuity method of depreciation, but only to the extent fixed assets were financed by debentures.

> ... the balance of First Debentures should be cleared off in five or six years from now, thus freeing a yearly charge of £12,000 which would become available for dividend purposes.[57]

Were the shareholders to conclude that completion of the redemption process would cause depreciation of fixed assets to cease?

Reserves

The company's reporting practice regarding the creation and utilisation of reserves was for full disclosure. Transfers between the profit and loss account and the balance sheet were shown and the year end totals appeared on the face of the balance sheet (Table 1). An examination of the data contained in Table 2 indicates that the general reserve account was created and augmented in good years and drawn upon so as to maintain, as far as possible, an overall credit balance on the profit and loss account when trading conditions declined.

Dividends and Capital Reorganisation

Adjustments were made to the issued share capital of SISC on two occasions.

1. The company's chairman Lord Granville died in March 1891 and there ensued a legal wrangle concerning the liability of his estate for the uncalled balance on the deceased's shares. The eventual compromise arrived at after calling in the services of a 'most experienced accountant, one at the very top of the profession'[58] included the forfeiture of 8,004 £10 shares, £7.10s.0d paid. The £60,030 released by this arrangement was deducted from a selection of fixed asset accounts including an allocation of £30,000 to eliminate the goodwill balance arising from the asset transfers which occurred when the company was formed.
2. In 1913 the capital structure was reorganised with the aim of removing the harmful effect on the company's commercial standing caused by the existence of cumulative arrears of preference dividend amounting to 126% or £252,000.[59] Prior to the reorganisation dividends had been paid on the company's preference shares on only a few occasions (Table 2) with no dividend on the ordinaries ever having been declared. On the basis of reported results the directors followed a consistent and cautious policy regarding the distribution of profits. The declaration of a dividend was conditional not only on the existence of a balance of profit for the current year but also on the absorption of previously incurred trading losses. Consequently the revenue account, at Shelton, was regarded as continuous. This contrasts with the practice later approved in *Ammonia Soda Co. v. Chamberlain* (1918), where the court extended further its policy of allowing company directors the maximum latitude, concerning the source of distributions, by permitting the payment of a dividend without first writing off an accumulated debit balance on profit and loss.[60]

Undisclosed Write-Offs

The amount of expenditure debited to the fixed asset account fell dramatically between 1910 and 1915.[61] This occurred despite the fact that the company embarked upon wholesale modernisation and extension of production facilities during this period. The explanation for the apparent anomaly is contained in Table 3 which lists a variety of items charged in arriving at profit for the year. Not all the items catalogued represent incremental productive capacity. In particular it is likely that the transfers to 'Suspense Account' and 'Provision for Special Repairs' were used, at least partly, to cover the cost of renovation to property. The nomenclature used to describe the other charges, however, clearly indicates a conscious decision to write off capital expenditure against revenue immediately it was incurred: a policy in direct contrast with the earlier accounting treatment which capitalised expenditure on fixed assets and incorporated few attempts to amortise the resulting totals as depreciation occurred. Another important difference, the significance of which is discussed below, is that whereas the meagre write-offs made during the 1890s were treated as appropriations of profit and given full publicity, the deductions made during the second decade of this century took the form of undisclosed charges against revenue made before the profit balance was struck. One link with the earlier series of deductions, however, is that the decision to transfer capital expenditure from the balance sheet to the profit and loss account followed and perhaps depended upon an upturn in corporate profitability. Between 1910 and 1919 profits were consistently higher than during any previous period in the company's history (Table 2). It is true that towards the end of the decade substantial additions to fixed asset account were made despite the deductions listed in Table 3. These can be explained in terms of (i) a major extension of the steelworks in response to requests from the Ministry of Munitions,[62] and (ii) the cost of acquiring The Silverdale Collieries.[63]

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[57] Chairman's report on the 1913 accounts, book 23, fo. 82, NWRCC/472.

[58] Ibid., chairman's report on the 1892 accounts, fo. 22.

[59] The ordinary shareholders suffered a reduction of 80% in the nominal value of their holding whilst the preference shareholders accepted ordinary shares in exchange plus compensation for the arrears of dividend. SISC scheme for reorganisation, book 23, fo. 72, NWRCC/472.

[60] 1 Ch. 266.

[61] Between 1890–1909 £422,797, or £21,139 per annum, was added to fixed assets; for 1910–15 the corresponding figures were £34,439 and £5,740.

Capital accounting policy: conclusions

It is probably fair to say that at Shelton capital expenditure was not accounted for in a systematic and consistent manner. The period examined saw regular declarations from management that 'The Company's Plant and The Works' had been fully maintained out of revenue. Doubt has been cast on the validity of these assertions; indeed one may be justified in enquiring whether the idea of renovation can have more than an extremely restricted significance in an industry benefiting from rapid technological advance and suffering from marked changes in consumer demand. We have seen that in practice the company did not rely wholly on the policy of charging repairs and renewals to revenue in order to achieve (i) a fair measure for profit and (ii) correspondence between the balance sheet figure for fixed assets and their value to the business. Other capital accounting practices employed at Shelton included the following:

(a) Depreciation was deducted in six years between 1894 and 1900 (Table 2) and a writing off allowance was charged against profits in the years 1916–18 (Table 3).
(b) A variety of deductions were made from profits between 1910–19 (Table 3) to cover improvements, extensions and new work.
(c) Miscellaneous credit balances, including the amount released on the forfeiture of the late Earl Granville's shares in 1896 and the balances on the sinking fund accounts, were deducted from the fixed asset totals in the balance sheets.

A common theme underlying the apparently casual manner in which items (a) and (b) appeared in the accounts is that deductions occurred when profits were highest. The policy appears to have been to charge what the traffic would bear.

Financing business activity

Current accounting practice postulates that depreciation charged in company accounts should reflect (a) the actuality of and (b) the extent to which fixed asset values have declined during the preceding accounting period. The capital accounting procedures employed at Shelton cannot be explained in these terms. Evidence has been presented to suggest that various deductions made to reflect the diminishing value of fixed assets depended, for their size, on the level of profits rather than on the extent of actual depreciation. The fact that capital expenditure write-offs occurred only in certain years means that the decision to make a deduction must also be explained in terms other than a desire to portray economic reality. In the absence of institutional pressures to choose particular accounting practices we might expect management to employ those which are best suited to the attainment of particular corporate objectives. In the early years at SISC a principal objective must have been to attract sufficient finance to stay in business.

Finance for business activity falls into two basic classifications—that generated by the firm internally, as the result of successful trading, and that raised from outside. If a corporate objective is to ensure the availability of sufficient cash to enable the continuance of productive activity then management may chose between profit measurement and reporting procedures which (a) earmark for retention the maximum amount of internally generated resources, and (b) portray the results of business activity in a manner which is likely to attract external providers of finance. Prior to the emergence of an established body of conventional procedures for measuring profit and reporting business activity, management most probably selected those accounting methods which best supported its chosen strategy. The capital accounting procedure which produces the lowest

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[62] Chairman's report on the 1917 accounts, book 23, fo. 104, NWRCC/472.

[63] Ibid., chairman's report on the 1919 accounts, fo. 116.

TABLE 3

Undisclosed Debits to the Profit and Loss Account

Year	*Melting shop extension* £	*Writing off allowance Steelworks extension* £	*Suspense account* £	*Steelworks improvements written off* £	*Provision for new work* £	*Provision for special repairs* £	*Expenditure on 18" Mill* £	*Total* £
1910	—	—	12,096	—	—	—	—	12,096
1911	—	—	2,797	44,518	—	—	—	47,315
1912	19,878	—	15,308	—	—	—	—	35,186
1913	—	—	—	—	35,300	—	—	35,300
1914	—	—	—	—	15,500	—	—	15,500
1915	—	—	—	—	32,000	—	18,563	50,563
1916	—	4,452	—	—	50,000	—	—	54,452
1917	—	17,610	—	—	—	60,000	—	77,610
1918	—	22,287	—	—	—	50,000	—	72,287
1919	—	—	—	—	—	—	—	—

total for reported profit involves writing off capital expenditure against revenue immediately it is incurred.[64] This device might be used to help implement a reinvestment policy since claims for higher dividends and wages, and more tax, which might well be made if the true facts were known, are avoided. If this ploy is successful then management is able to undertake additional investment without reference to providers of external finance. If management decides to emphasise external financing, then the objective, when choosing a method of accounting for capital expenditure, will be to report profits and declare dividends which provoke a favourable response amongst the investing public. This may result in 'window dressing' and perhaps even falsification of the accounts. If this course is chosen write-offs must be kept to a minimum and repairs and renewals accounting and replacement accounting, despite their theoretical and practical shortcomings, have obvious attractions which were not missed by railroad managers during the period of intense speculation and building activity known as the railway mania.[65] It is here that we may find an explanation for the profit measurement and reporting procedures employed much later at Shelton and perhaps elsewhere. Immediately following flotation of the company it became clear that a period of reasonable prosperity was at an end[66] and, despite the continued optimism expressed in successive chairman's reports,[67] trading was unlikely to prove highly remunerative. In addition to the effect on Shelton's results of declining demand within the iron industry generally during the 1890s, the company faced particular internal difficulties. One problem was the unsettled management structure. The main recommendation made by Jeremiah Head to the directors of SISC, in 1892, was:

> ... you should abolish as soon as possible the dual Managing Directorate, and should substitute for it a single General Manager, who, subject to the Board, shall have sole and complete executive control over your whole Works, and with it full responsibility.[68]

Although this proposal was implemented, there followed a 10 year period of experimentation with various individuals until a manager was found capable of assuming the role envisaged by Jeremiah Head. A second major difficulty at Shelton arose from the fact that steelmaking facilities were developed at a late stage and throughout the 1890s the company remained heavily committed to iron despite being 'aware of the fact that the life of the business in wrought iron of any kind must necessarily be ... of a precarious character.'[69] If, in these circumstances, the directors concluded that SISC would be unable to finance business activity from internal sources only one option remained—to report results which would not appear unattractive to providers of external finance.

The first 15 years of trading saw the company continuously short of cash and heavily reliant on debt finance. A meeting of the directors held in April 1890, 4 months after incorporation, records the negotiation of a £50,000 overdraft facility with Lloyds Bank.[70] Minutes of subsequent board meetings report correspondence to arrange a security as it becomes clear that early repayment cannot be achieved.[71] No mention is made of this liquid obligation in the company's balance sheet where it is included as part of a total covered by the description 'Sundry Creditors, Bills payable, &c.' (Table 1). Probably the company was undercapitalised from the outset when £250,000 was raised by way of Mortgage Debentures and Cumulative Preference Shares but, of this, £220,000 was paid to the vendors of the Shelton Collieries and Ironworks and the Shelton Iron and Steel Company Ltd.[72] A *Memorandum on the Future Outlay to be incurred in Improvements*, prepared during the first year of the new company's existence, forecast capital expenditure of £101,300 for the years 1890–95. During this period the oustanding balances on the preference shares and ordinary shares were called up but the amounts collected proved totally insufficient to cover the planned capital expenditure and associated working capital requirements.

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[64] This practice was employed by the Dowlais Iron Company throughout the nineteenth century: J. R. Edwards & C. Baber 'Dowlais Iron Company: Accounting Policies and Procedures for Profit Measurement & Reporting Purposes', *Accounting & Business Research*, Spring 1979.

[65] The discretionary nature of reported profit, in the absence of regular depreciation, is discussed in H. Pollins, 'Aspects of Railway Accounting before 1868' (note 31 above).

[66] Chairman's report on the 1895 accounts, reported in the *Staffordshire Sentinel*, 17 April 1896. Also see comments from those attending the second ordinary general meeting, reported in the *Staffordshire Sentinel*, 13 April 1892.

[67] Chairman's report on the 1894 accounts, reported in the *Staffordshire Post*, 2 April 1895.

[68] *Report on the Iron & Steel Works*, Part III, p. 23.

[69] Chairman's report on the 1891 accounts, reported in the *Staffordshire Sentinel*, 13 April 1892.

[70] SISC minute book 1889–92, 23 April 1890, fo. 50, NWRRC/472/3/1.

[71] Ibid., 29 March 1892, fo. 265, and 25 August 1892, fo. 299. The arrangement being conditional, on 'the examination of the printed reports and accounts of the Co: as they appear from time to time...', NWRRC/472/3/1.

[72] The vendors also received £225,000 in 30,000 £10 ordinary shares, £7.10.0 paid, prospectus dated 12 December 1889, book 23, fo. 1, NWRRC/472.

In the absence of more than nominal charges to reflect depreciation of fixed assets, in which there was an investment averaging approximately £½ million throughout the 1890s, the firm succeeded in reporting profits, in certain years, and dividends were paid. Between 1896 and 1900 the company paid its preference shareholders dividends totalling £56,000, or an average rate of approximately 5½% per annum. These returns appear inadequate in comparison with an entitlement of 7% per annum particularly in view of the fact that no dividends whatsoever had been paid between 1891 and 1895. But SISC's record may have been better than average for the iron and steel industry where 'in the late nineties [dividends] practically disappeared.'[73] It is reasonable to ask how the company was able to pay these dividends if the contention that they were based on entirely illusory profits is correct. A. T. Hadley in his book *Railroad Transportation* wrote:

> A railroad has two ways of getting money; it may earn it, or borrow it. It has three ways of getting rid of money; it may spend it, invest it, or divide it.[74]

The management of SISC proved that this comment is equally true of other companies. The company issued £500,000 of debentures during the first 16 years of its existence. In order to stimulate a demand for these securities the directors endeavoured to present the company's trading results in the most favourable light. For instance the prospectus which publicised the 1898 issue of second mortgage debentures contains profit figures for 1896 and 1897 described as 'after providing for depreciation.'[75] In fact the aggregate depreciation charged up to that time was £7,000 or an average of 0.2% per annum since incorporation on the book value of fixed assets. Using the rates suggested by Jeremiah Head in his report or the higher and perhaps more realistic figures of 5% on blast furnaces and 7.5% on rolling mills, put forward by Ewing Matheson in *The Depreciation of Factories*,[76] would have resulted in the company reporting losses rather than profits for a number of the early years, strongly suggesting that the source of the companies dividends was capital rather than revenue. The fact that the 1898 prospectus conveyed the intended, albeit mistaken, impression to the outside world is demonstrated by an extract from the newspaper *Finance* which refers to the capital expenditure balance having been arrived at after 'writing off the proper amount for depreciation....'[77] The fourth, and last, debenture issue made in 1904 marked the turning point in SISC's fortunes. In that year the Coking Company Ltd. was formed (i) to erect washing apparatus and coking plant for utilising Shelton's slack coal, and (ii) to work in alliance with SISC;[78] the latter objective being interpreted to mean providing the holding company 'with the funds we so badly needed.'[79] The issue was directed at SISC's own shareholders since it was felt that no one else was likely to find it attractive in view of the parent company's past performance and present financial position. In fact the flotation was not a resounding success and it was only because some of the company's larger shareholders stepped forward that 'our Shelton position was saved'.[80]

In the years that followed this element of vertical integration was extended with the acquisition of the Florence[81] and Silverdale[82] collieries which, together with the favourable conditions for iron and steel making created by the first world war, saw SISC out of its difficult beginnings and into a period of sustained prosperity. The improvement in trading results was accompanied by and perhaps responsible for a revision of capital accounting and reporting practices. The tendency to increase the rate of write-off during the second decade of the twentieth century, and conserve resources within the firm which could be used to finance business activity,[83] has already been discussed. It was also during this period that the company began to extol the virtues of conservatism in financial matters. The chairman's report on the 1915 accounts refers to the fact that 'every figure in the whole balance sheet is on a thoroughly sound and conservative basis.'[84] This claim could not, in all honesty, have been made during the first 20 years of the company's existence. A more surprising aspect was the trend towards concealment rather than the fuller disclosure often thought to be associated with periods of high prosperity. In 1916 the company stopped publishing a profit and loss account and whereas before 1909 all capital expenditure write offs, however small, were fully reported, the substantial reservations, made out of profits from 1910 onwards, remained undisclosed. Clearly the directors had decided to shift the emphasis from external to internal finance.

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[73] T. H. Burnham & G. O. Hoskins, *Iron & Steel in Britain, 1870–1930*, Allen & Unwin, 1943, p. 249.

[74] Putnam's 1909, p. 56.

[75] Prospectus dated 30 March 1898, book 23, fo. 33, NWRRC/472.

[76] E. & F. N. Spon, 2nd edition 1893, p. 41.

[77] 2 April 1898, under the heading 'Iron, Coal and Steel'.

[78] Prospectus dated 7 May 1904, book 23, fo. 54, NWRRC/472.

[79] Ibid., chairman's report on the 1915 accounts, fo. 89.

[80] Ibid.

[81] Ibid., chairman's report on the 1915 accounts, fo. 89, and 1917 accounts, fo. 104. The colliery was leased by the Florence Coal and Iron Co. to the Coking Co.

[82] Ibid., directors' report, fo. 105, and chairman's report, fo. 108, on the 1918 accounts. The colliery was purchased in 1918.

[83] The company prepared a statement of funds for the period 1915–19 which treats 'provisions for new work' and 'provisions for special repairs' (Table 3) as sources of funds, miscellaneous accounts, 1919–21, NWRRC/472/4/1.

The use of internal finance as the basis for expanding a company's scale of activity is, of course, widespread. It is, perhaps, a particularly important source of finance for the unincorporated enterprise whose access to funds is much more restricted than say the large public company. Even within the latter category however, there are examples of firms having grown to an immense size on the basis of internal finance. Within the iron and steel industry The Consett Iron Company prospered in this manner between 1864, when it was incorporated, and 1914.[85] In fact the prudent financial policy pursued by Consett's management has been identified as an important factor contributing to its above average profitability. Unlike SISC, however, the substantial reservations made out of profits at Consett appear to have been fully disclosed. The reporting procedures at SISC show much more evidence of the contemporary trend towards understatement and conservatism in financial matters: developments which were gaining momentum within the business community and remained unchecked until the prosecution of The Royal Mail Steam Packet Company's chairman and auditors in 1931.[86]

Postscript: the external audit

On the basis of surviving material it is not possible to discover very much about the auditors' attitude towards and, indeed, their influence on the Shelton Companies' reporting practices. A few interesting points do emerge, however, from the information which is available.

In 1853 the partners in The Shelton Bar Iron Company appointed two of their number to the position of auditor.[87] By 1862 the partners had made the voluntary decision to engage the services of an independent professional accountant for this purpose. The company's auditor, John Adamson of John Adamson & Co., was a founder member of both the Manchester Institute of Accountants and The Institute of Chartered Accountants in England and Wales. From 1867 his report consisted of the unambiguous assertion that the accounts had been 'Examined and found correct'.

The strong element of certainty expressed in the above statement suggests that the audit function was considered a relatively straightforward process. This may mean that the auditor's activities did not extend beyond a comparison of the balance sheet with the underlying records which were checked only for numerical accuracy. The directors' decision to value fixed assets at cost and the auditors' willingness to accept this treatment did, of course, significantly reduce the amount of subjective judgement involved in final accounts preparation.[88] It must also be remembered that the partners had every opportunity to familiarise themselves with the true facts.

At the time of SISC's incorporation Deloitte, Dever Griffiths & Co. (Deloitte, Plender, Griffiths & Co. from 1905) were appointed joint auditors. The prospectus issued in 1889 refers to the fact that the books of the amalgamating companies had been examined by the new auditors who 'report that the average *net* annual revenue for the *10 years* ending December 31st, 1888, of the two businesses combined, amounts to *£25,032*.'[89] In June 1890 John Adamson & Co. were relieved from their position as joint auditors and the accounts for each of the first three years of trading were reported on by Deloitte, Dever, Griffiths & Co. as follows:

> We have examined the Books and Accounts of the Company to 31st. December... and have approved the above Balance Sheet.[90]

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[84] Chairman's report on the 1915 accounts, book 23, fo. 89, NWRRC/472.

[85] H. W. Richardson and J. M. Bass, 'The Profitability of Consett Iron Company before 1914', *Business History*, vol. 12, 1965, p. 71.

[86] J. R. Edwards, 'The Accounting Profession and Disclosure in Published Reports 1925–1935', *Accounting and Business Research*, vol. 6, 1976, p. 289.

[87] SBI minute book, 1852–86, 18 January 1853, NWRRC/472/3/1.

[88] In Pixley's view, but for the need to calculate depreciation 'Accountancy might certainly be described as one of the exact sciences,' *Accountancy*, p. 199.

[89] Prospectus dated 12 December 1889, book 23, fo. 1, NWRRC/472.

[90] Ibid., fo. 13.

It may be that by 1893 the auditors were uneasy with the directors' practice of omitting depreciation from the accounts. In any event the following sentence was added to the report:

> No fund is in existence in respect of depreciation but we are assured that the Plant and Works have been fully maintained out of Revenue.[91]

And in 1894 when a small deduction was made:

> Apart from the £2,600 shewn above, no general depreciation has been provided against, as noted in the past, but we are assured that the plant and works have been fully maintained out of Revenue.[92]

It would seem that this reservation complied with current best practice:

> One has met with directors who have maintained that no provision for depreciation was necessary, as the plant &c., are maintained out of revenue; or there are cases where directors like to show their profits without deducting depreciation, and then deal with depreciation along with dividends in disposing of profits. In either case the auditor should certify that the profit is subject to an allowance for depreciation....[93]

No reference was made either to depreciation or to the state of the company's fixed assets between 1896 and 1899. It may be that the variety of deductions[94] made from the fixed asset account during those years were considered sufficient to achieve a degree of correspondence between the balance sheet totals for fixed assets and their value to the business. None of these deductions, however, affected reported profit and all but the write off for depreciation bypassed the profit and loss accounts entirely. The auditor's reports from 1900 onwards reflect the requirements contained in The Companies Acts 1900 and 1908. No further reference is made to the absence of a depreciation charge or to the state of the company's fixed assets. From 1906, of course, the balances to the credit of sinking fund accounts were deducted from fixed assets. We have also seen that the auditor required certificates from management to the effect that fixed assets had been kept in proper repair and in a state of efficiency out of revenue. It may be that the auditors shared with management the view that it was unnecessary to charge depreciation since the decline in fixed asset values was 'provided by other means'.[95]

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[91] Ibid., fo. 26.

[92] Ibid., fo. 27.

[93] Walter A. Reid, 'Depreciation', *Accountant's Magazine*, vol. 1, 1897, p. 156 at p. 162.

[94] See section entitled 'Capital accounting policy: conclusions'.

[95] See section entitled 'Contemporary attitudes towards depreciation' for Dicksee's criticisms of this argument.

Book Reviews

The Evolution of Corporate Financial Reporting. *Edited by T. A. Lee and R. H. Parker.* Nelson, 1979. xi + 307 pp. £14·95.

Anyone who studies the history of accounting in any depth usually comes to the conclusion that few major current issues are unique. However, C. B. Taylor has cautioned 'The student of history ... [to] avoid that error which the proverb calls "measuring other people's corn by one's own bushel".'

There is a tendency by many people to view problems in terms of their own limited experiences. While one may be comfortable with the derived, short-term solutions, it is possible that better solutions could have been derived if one had had a better perspective. The purpose of this book of readings is to provide a better perspective on current corporate financial reporting. It is the intention of the authors that the book not be limited in use to students of accounting, but that it should be helpful to all who are interested in the information conveyed by corporate financial reports.

Financial records and reporting have been studied from at least the 12th century to the present. However, it was not until the emergence of the corporate form of business entity that financial reporting was assigned real significance. This means that the evolution of corporate financial reporting has occurred over the relatively short period (historically) starting in about 1850.

This book is divided into three parts. They are: general developments in corporate financial reporting (5 articles); specific developments in individual parts of corporate financial reports (5 articles); and specific influences underlying changes in corporate financial reports (7 articles). The authors, wisely, 'have excluded extended coverage of such currently controversial areas as accounting standards and price-level accounting. Also, the articles included primarily refer to US or UK corporate financial reports. This provides some basis for contrast and comparability. While financial reporting in each country has a different economic environmental condition, the countries are similar in that they have an underlying philosophy toward fair disclosure.

Part one is an examination of changes (progress?) in financial reporting as evidenced in published financial statements of organisations such as Distillers Company Limited and United States Steel Corporation. There are several studies representing British development. They indicated that during the late 1800s through the 1960s, such development in financial reporting could be characterised by '... the conservative nature of accounting policies ...; the lack of profit information of any consequence; and the lack of data concerning subsidiary and associated company investments.'

Part two contains articles that discuss the problems of the adequacy of financial reporting in relation to the users' needs, and the reliability of the reported financial information. Therefore, the specific subjects of consolidated statements and the audit function are addressed. In addition, an overview of the evolution of the funds statement is presented.

The British experience relative to consolidation statements starts with the 1922 Garnsey lecture, in which the value of consolidated statements to supplement the legal balance sheet was strongly advocated. The reaction and criticism against such a practice came not only from the business community but also from leading professional accountants. It was not until the 1948 Companies Act that consolidated statements were required in the UK.

Consolidated statements, in various forms, had been published in the USA since about 1900. By 1920 they were a widely accepted form of financial reporting. It is also pointed out that the Netherlands, France and Germany had various concepts of consolidated reporting. This section illustrates, vividly, the normal resistance to innovation and the diversity of thought and practice with regard to the adequacy of financial information.

The evolution of the audit function in the UK and the USA is very well presented in two articles. Developments in the UK between 1840 and 1940 are shown in relation to changes in legal requirements, and the changing objectives of auditing were often due to the impact of case law. The legal history of the audit function moves from fraud detection to the verification of the credibility of financial accounting information. Development of the audit function in the US is not easily traced through changes in legal requirements. Rather, it was subjected to change by the various professional groups and the stock exchanges. After 1933 the Securities and Exchange Commission exerted considerable influence on the thinking of the profession. However, as in the UK, case law has been a factor in defining the audit function.

Part three deals with the influence on financial reporting development as follows: chronological development, legal and regulatory influences, and pressure group influences. The chronology by Nobes and Parker lists the events in the UK from 1844 to 1977. The chronology by Zeff is for the US from 1926 to 1978. The authors list what happened and when; they do not attempt to explain the events. These two lists are very useful references.

The articles on legal and regulatory influences by Edey, Yamey and Carey cover, in greater detail, many of the issues outlined in the section on the evolution of the audit function. Both Aranya and Edwards discuss more fully the pressure group influences regarding changes in reporting practices in the UK. These two articles articulate well with those on consolidated statements.

I have not commented on each article for the simple reason that I have found them to be of uniformly high quality. In addition, the sequence of the subject matter is well contemplated. It is one of the better books of readings that I have read.

The authors have indicated that each of the articles has been class tested and found to be pedagogically very useful. I am inclined to agree with their estimate. Each of the 'cases' would be an excellent vehicle for discussion and learning. Both the students of accounting and those with some knowledge of business and accounting could, through this text, develop a much better perspective on corporate financial reporting.

Georgia State University A. R. Roberts

The Making of a Profession. *Tom Margerison.* The Institute of Chartered Accountants in England and Wales, London, 1980. 43 pp. £2.00.

Anniversary celebrations often lead to excursions into accounting history. We owe Richard Brown's classic *History of Accounting and Accountants* (1905) to the fiftieth anniversary of the Scots chartered accountants and the Scottish centenary in 1954 brought forth a useful history. The English Institute anticipated its centenary by the publication in 1966 of *The History of The Institute of Chartered Accountants in England and Wales 1880–1965 and of its founder accountancy bodies 1870–1880.* Mr. Margerison's booklet is much less ambitious and is not based on original research. He has, however, made good use of previous work and the bibliography on page 40 is an excellent guide to those who want to pursue the profession's history in more detail.

As Mr. David Richards, president in the Institute's centenary year, puts it, 'Accountancy is not just about figures; it is also about people'. The first person in this book is inevitably Luca Pacioli but we soon move on to William Welch Deloitte, William Quilter, William Turquand, Frederick Whinney, George Walter Knox, the Cooper family in July 1856, Sir James Martin, Sir William Plender and others. The presence of Martin in this list is a reminder of the incorporated accountants who amalgamated with the chartered accountants in 1957. Mr. Margerison is at pains to deal with British accountants in general not just with English chartered accountants.

This is a lively and readable book well supplied with illustrations and graphs and even cartoons. Most of them are well chosen, although I have doubts about 'Winston Churchill accompanying Lloyd George to Commons 1910,' and the 1970 extension of Chartered Accountants' Hall is made to look worse than it really is (Pevsner in *The Cities of London and Westminster* regards it as proof that 'the uncompromisingly new can go with old, if handled by an appreciative and imaginative architect').

The graph on page 35 showing the growth of total membership of the English Institute 1880–1980 will repay close study. In 1980 there are about 68,000 English chartered accountants, double the number there were in 1960. The graph gives figures for every five years. The most notable quinquennium was 1955 to 1960, when membership rose from 19,000 to 34,000 (about 10,000 of the newcomers were former incorporated accountants).

Apart from F. R. M. de Paula, who was a part-time professor at the London School of Economics, no academic accountant is mentioned in this booklet. This reflects, of course, the lack, until very recently, of an academic branch of the accountancy profession in England and Wales.

It is a pity that the proof-reading failed at one point. John Mellis, who republished Hugh Oldcastle's book of 1543 in 1588, described himself not as a 'rescuer and receiver' but as a 'renuer and reviver'!

This is a booklet for the unitiated rather than the serious accounting historian. To the former it should give both instruction and pleasure.

University of Exeter R. H. Parker

Studies in Accounting (3rd edition). *Edited by W. T. Baxter and S. Davidson.* Institute of Chartered Accountants in England and Wales, 1977. xii + 426 pp. £9·95.

The first edition of this well-known book of readings was published in 1950 under the sole editorship of Professor Baxter; the second edition, edited by Baxter and Davidson, was published in 1962. Only four articles have survived from the first to the third edition: Henry Rand Hatfield's *An Historical Defense of Bookkeeping*, John McCarten's *The Greatest Accountant in the World*, Ronald Edwards' *The Nature and Measurement of Income* (in the shortened version of the 2nd edition) and Kenneth MacNeal's *What's Wrong with Accounting?* One may have doubts about the continuing value of McCarten's piece from *The New Yorker* but the other three are established classics which one hopes yet another generation of accounting students will, in the words of the introduction to this new edition, read for 'entertainment and help'.

Five articles first published in the second edition have been carried forward into the third, in some cases in a revised form. They are Yamey's *Some Topics in the History of Financial Accounting in England, 1500–1900*, Alexander's (revised Solomons) *Income Measurement in a Dynamic Economy*, Boulding's *Economics and Accounting: The Uncongenial Twins*, Gould's *The Economist's Cost Concept and Business Problems*, and Hasting's *The Case of the Royal Mail.* We would have missed them all had they been excluded this time.

Fourteen articles are included for the first time. They are by Hansen, Paish, Thomas, Wright, Lewis, Goudeket, Churchill, Morison, Edey, French, Ball and Brown, Sterling, Carrington, and Carsberg, Arnold and Hope.

Twenty-three articles in all, then, is what the editors offer. They are divided into ten groups: history; asset valuation and income theory; depreciation; price change; the accountatnt and the community; authority; law; outside the law; special aspects; and things to come.

The history section (Hatfield and Yamey) is little changed from the second edition. Hatfield read his paper in 1923 to show that accounting in its origin is 'respectable, nay, even academic' and that it justifies itself in that it has arisen to meet a social need. His message is still relevant—and even if it were not this reviewer would still read Hatfield for pleasure. His successors in the United States may be more numerate but why are most of them so much less literate? Yamey's erudition is as dazzling as ever. Even those accountants with little interest in the history of their subject should ponder the implications of his remark (p. 29) that the funds statement 'bears a strong family resemblance to the charge-and-discharge accounts of our ancestors'.

The asset valuation and income theory section contains nine articles and occupies more than 40% of the book. The reviewer welcomed the opportunity to reread Edwards' classic series of articles, which is full of ideas with which later writers have agreed or disagreed. It is a pity that these are not better represented in the present volume. Where is Chambers to challenge the conclusion that 'for valuation purposes the separate selling prices of all the assets are important as a measure of the worth of the business only at the time when the business should be closed down' (p. 129)? Where is Lawson or Lee to elaborate on the suggestion on p. 134 that the main published reports of industrial firms should consist of receipts and payments accounts with certain adjustments?

There are interesting new articles on such issues as the accountant and the community, authority and dividend law. Churchill's *Toward a Theory for Social Accounting* contains some useful insights. For example: social responsibility is a moving target, since social benefits become expected once they are attained and their continued presence is no longer viewed as a social benefit but as a social right; economic benefits accrue to the economic entity but social benefits do not. There are also some good examples for discussion. It is all the more regrettable that the article is repetitive and rather badly written.

The articles on authority in accounting are contributed by Morison, a practitioner, and Edey, an academic. Morison writes very well indeed. He distinguishes between an 'only one possible answer' school and a 'let's settle for one view anyhow' school and finds both wanting. His own answer is to give companies the maximum freedom to present their accounts in whatever way they think fit and then to require them to explain and justify the course they have taken. Edey, on the other hand, argues persuasively that the formulation and issue of standards, far from quelling discussion, has brought about a great increase in the amount of open argument and controversy in British accountancy. He performs a much-needed hatchet job on SSAP2's so-called fundamental accounting concepts. French provides a masterly survey and analysis of the evolution of English dividend law.

It is disappointing that the editors have included no articles on comparative or international accounting. The index is poor (no entry for 'predictive value', for example, although a whole article is devoted to it) and the proofreading weak (e.g. 'concencus' on p. 306 and 'sobeit' on p. 377). But these are minor grumbles. *Studies in Accounting* remains one of the best books of readings on the market.

University of Exeter R. H. Parker

History of Public Accounting in the United States. *James Don Edwards.* The University of Alabama Press, 1978. xiv + 370 pp.

There was no coherent account of the rise of the public accounting profession in the United States before the original publication of Professor Edwards's study by Michigan State University in 1960, and we are now indebted to the Academy of Accounting Historians for bringing it back into print. As Edwards says, 'most of the histories of accounting begin with Assyria and Babylonia, leap to Italy in the days of the well-known Renaissance tutor, Pacioli, then hurry across Europe to devote their remaining space to the origin and growth of public accounting in Great Britain. By the time the histories have covered the period from the South Sea Bubble to the organization of the British Societies during the third quarter of the nineteenth century, the authors have exhausted their space, and give but little thought to the United States.' Edwards was a pioneer in helping to remedy this imbalance. His book developed out of his doctoral dissertation, which was written at the University of Texas and completed several years before this fuller version was published.

The first edition of Edwards's book carried a foreword by John L. Carey, then executive director of the American Institute of Certified Public Accountants, commending the book as 'a readable, reasonably concise history of the accounting profession from its beginnings to the present day.' Carey may well already have been working on, or at least have been contemplating, his own much fuller account of the same events, published in two volumes in 1969 with the title *The Rise of the Accounting Profession.* Carey spent his whole working life in the service of the AICPA, and so was intimately involved in or was close to many of the developments about which he wrote. He had joined the Institute as its assistant secretary in 1925, at the age of 21, and had become its secretary in 1930. He retired, full of honours, in 1969. Inevitably his book overshadows Edwards's work. It is richer in detail, it is better organised and its sources of information are vastly more numerous. As Carey says in an appendix listing his source materials at the end of his first volume, 'much of what appears in this book is based on unpublished sources—minutes and transcripts of meetings, memorandums and correspondence in the files of the American Institute of Certified Public Accountants, in addition to the personal observations and recollections of the author, who was on the scene from 1925 onward.' In evaluating Edwards's book, it is impossible to avoid comparison with Carey's. Carey would have had to be a much less skilful author than he was for his advantages not to make his book the preferred source for anyone who wants to learn about the development of public accounting in the United States, at least from 1896 onwards.

The history of a profession can be written chronologically or it can be written topically, that is by identifying the main facets of the unfolding story. Edwards says that he chose to follow a chronological sequence because it 'seemed to present less difficulty to the reader.' That is a matter of opinion. If it is less difficult for the reader, it is undoubtedly also less illuminating; and in the limit, as in parts of his chapter dealing with the 1950s, one is confronted by what is little more than a miscellany of unrelated events—international congresses, an Institute committee on long-range objectives, AICPA films, an anniversary meeting of CPA examiners, a change in the Institute's name and ARB No. 44, all within the compass of five pages.

The chronological scheme chosen by Edwards divides the history of public accounting in the USA into five periods. His first period runs from 1748 to 1895. He takes 1748 as his starting point because in that year Benjamin Franklin sold his interest in a printing company and asked one of his partners, James Parker, to prepare an account of the settlement on the sale. Edwards asserts that this may have been the first public accounting engagement in the American colonies, though there is no evidence that Parker practised as an accountant.

The second period runs from 1896 to 1913. The start of this period is marked by the passage of the first state law giving recognition to the designation 'certified public accountant.' This was in the state of New York. Pennsylvania followed in 1899, and, by 1913, 31 states had such laws. The end of this period is marked by the passage of the 16th Amendment to the US Constitution, which gave Congress the right to enact a federal income tax law.

Edwards's choice of the terminal dates for his third and fourth periods are somewhat more arbitrary. The third period ends in 1928, just before the onset of the Great Depression, and the fourth period ends in 1949. There seems no better reason for the choice of 1949 than that it left Edwards free to devote his last chapter (except for a summary chapter) to the 1950s, at the end of which decade his book was published.

Once a chronology of events has been established, it is much easier for later writers to see how a logical structure might be imposed on those events, and John Carey must have benefited from the trail that Edwards had left. Carey devoted less space than Edwards to the period before 1896 but, since he published later, he was able to carry the story down to 1969. He chose 1936 as the dividing line between his two volumes, that being the year in which the two competing organisations that then made up the American public accounting profession were reunited. Carey did not ignore chronology—obviously no historian can—but his chapters are more than mere intervals of time, for each one represents a recognisable component of the evolving structure.

Carey pointed the way towards a structure for a history of our profession (as distinct from a history of accounting) and no doubt future historians will improve on it. There seem to be five broad themes that mark the development of an accounting profession, whether in the United States, Britain or any other advanced economy. There is the growth of professional organisations, their schisms and mergers and their struggle for public recognition. This recognition has been generally achieved by rising standards of professional education and rigorous examinations; that is the second theme. A third theme, which distinguishes accounting from most other professions, is the growth of a small number of large firms that have come to occupy a dominant position within the profession. The remaining two themes are the development of accounting and reporting standards and the development of auditing standards. Most of the legal battles in which members of the profession have been engaged over the years have involved alleged infractions of accounting or auditing standards or have arisen because of the absence of explicit standards. Litigation can therefore be considered in relation to those standards, and so can the impact of legislation such as the Companies Acts in Britain or of government agencies such as the Securities and Exchange Commission in the USA.

There are far more people interested in and working on accounting history now than there were when Edwards's book was first published. The very formation of the Academy of Accounting Historians, which came into existence in 1973, attests to that fact. If all this effort is justified, it must be because 'the past is a guide to the future,' as Carey wrote in introducing Edwards's book.[1] Unfortunately, it is at least as easy to misread the past as to read it correctly. A splendid example is given by Edwards (probably unintentionally, since he could not have foreseen, in 1959, how much litigation would confront the US profession in the next two decades) in a quotation from *The Accountant* of 1940 on the McKesson and Robbins case: 'McKesson and Robbins was not one case in a hundred, or even one case in a million; it was the grand exception unlikely ever to be repeated and unworthy of being the occasion for the laying of burdens and expense on a community in which, after all, honesty is the prevailing rule.' If that prediction had proved to be true, there would now be fewer practitioners licking their wounds on both sides of the Atlantic.

The Wharton School David Solomons
University of Pennsylvania

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[1] Did Carey show uncanny foresight in predicting the Academy's motto, *Praeterita illuminant postera*, or did the Academy borrow from Carey?

√**Accounting under Inflationary Conditions.** *Patrick R. A. Kirkman.* George Allen & Unwin, 2nd ed. 1978. xiv + 300pp. £4.95 (paperback).

This book outlines a number of inflation accounting systems and considers the many practical problems associated with their implementation. The earlier edition was the first text written by a British academic to deal extensively with these matters and, after a four year gap, publication of the second edition of this very useful book is most welcome. Some attention is devoted to examining the various theoretical issues that have been raised during the inflation accounting debate, but the author addresses his attention primarily to the practical world of the accountant. One consequence of this is that the balance of the book reflects the current state of play regarding conventional inflation accounting wisdom. The present edition, published in the aftermath of the Sandilands Report's rejection of CPP, devotes more space to current replacement cost accounting (which the author designates CRC) at the expense of general purchasing power accounting (GPP). Indeed the author seems to feel obliged to justify the amount of GPP material that remains. This is uncalled for. The systems which have attracted the bulk of our attention during the present decade have different objectives and possess diverse strengths and weaknesses. Concentration on one system to the exclusion of the other would not be in the best interests of the reader either in theory or in practice; indeed one cannot be sure that aspects of GPP accounting will not re-emerge in some future directive from one or other regulatory body and there are already some signs of a reaction in favour of GPP. Although the ASC's latest output on this topic makes no apparent concession to the more flexible approach favoured by the FASB in 'Financial Reporting and Changing Prices', the absence of unanimous agreement on the concept underlying ED24 has been forcibly brought to its attention by submissions made during the exposure period.

Much restructuring and rewriting of the initial text has been undertaken in order to bring the book up to date at the time of publication. The author retains, however, the same basic layout. Chapter 1 demonstrates the upward direction of world inflation rates, Chapters 2–8 examine the deficiencies inherent in conventional reporting procedures which this trend has emphasised, whilst Chapters 9–17 outline a number of inflation accounting systems and consider the ways in which they might be expected to improve the quality of accounting reports. The author has collected together a large amount of interesting and relevant data not readily available elsewhere. Chapters 3 and 4, which comprise a full treatment of the index numbers question, and Chapter 15, which contains the results of various investigations including the author's own research into the effect of inflation on reported profits, are particularly useful. I am not sure whether the title adequately describes the contents. Much of the book is devoted to CRC which some would argue is not a system of inflation accounting at all. Certainly, as the author repeatedly points out, the underlying ideas apply irrespective of the overall inflation rate; the only necessary ingredient is relative price changes. In addition, the title might lead one to expect more space to be devoted to the potential of the revised system as an improved basis for managerial resource allocation decisions whereas, in fact, concentration is almost entirely on the external reporting function.

The book is logically structured, it is well written and consequently the lines of argument are easy to follow. It might have been helpful to identify user groups and their supposed needs at an early stage in the text. This would, for instance, enable the reader to comprehend the otherwise apparently deviant behaviour of banks in favouring the inclusion of a monetary adjustment thus reducing their reported profit. It is not until a later stage that we are able to deduce that this may be because the Inland Revenue might use the resulting total as the basis for taxation. In a similar vein identification of the divergent objectives of GPP and CRC, which are never made explicitly clear, would help readers to understand and evaluate more easily areas of disagreement such as whether to include the monetary adjustment and if so whether to distinguish between gains arising from short term and long term liabilities.

In analysing the deficiencies of historical cost based accounts during a period of rapid inflation and in the thorough and unbiased assessment of the various proposals for improvement the author reveals his extensive experience and complete appreciation of the wide range of issues involved. There are places where some economy in space might have been possible. For instance Chapter 13 includes perhaps too much detail on the UK proposals which have been examined and rejected in the 1970s. Savings here might have enabled the author to explain more fully some of his claims for inflation accounting, examples of which are assertions that it produces a fairer assessment of profit for tax purposes and that it would help to increase capital investment.

The reason why readers are likely to find this a stimulating text is partly attributable to the author's willingness to tackle controversial issues. For instance Mr. Kirkman advocates legislation as the means of overcoming the business community's reluctance to adopt inflation accounting techniques. The author acknowledges that 'legislation should ideally be brief, with the mechanics of the system being left in the hands of the accountancy bodies whose statements should for this purpose have the power of law', but intervention in the area of asset valuation and profit measurement is something which historically company law has avoided and many take the view that this has been the correct course. The process of change must be gradual and the author probably lets off the ICAEW rather lightly for the lack of progress prior to 1970. The author points out that recommendation 15 (issued in 1952) suggested that accountants should draw attention to the desirability of making appropriations in recognition of the effect of inflation on business affairs and implies that responsibility for the fact this pronouncement had 'virtually no effect in the business sector' did not rest with the accountancy profession. The ICAEW's basic recommendation was, however, that historical cost should continue to be the basis on which annual accounts are prepared, and that for balance sheet purposes fixed assets should not usually be revalued upwards. Recommendation 15 moreover makes it clear that the balance sheet is an historical record and not a statement of current worth and this view received explicit approval in the Jenkins Report, para 333. In view of this it is perhaps not surprising that companies felt neither encouraged nor obliged to experiment with systems of inflation accounting in the 1950s and 1960s, and the result was that measurement procedures were in poor shape to deal with the problems raised by an upturn in the rate of inflation from 1968 onwards.

Any book designed to deal with the inflation accounting controversy in depth will inevitably contain some material with which the reader will find it difficult to agree. However, Mr. Kirkman's text is designed to stimulate interest and discussion rather than passive acceptance, and this it succeeds in doing. The book will undoubtedly remain popular with practitioners and will continue to be strongly recommended to students, perhaps in conjunction with W. T. Baxter's *Accounting Values and Inflation* which, possessing less of a practical bias, is able to examine in greater depth the fundamental issues arising from the decision to depart from historical costs.

University College, Cardiff J. R. Edwards

Readings in Inflation Accounting. *Wanless, P. T. and Forrester, D. A. R. (eds.).* John Wiley & Sons, 1979, 588 pp. £14.00.

In the last five years several books have been published in the UK and the USA on inflation accounting, but this is the first book (as far as the reviewer knows) of readings on inflation accounting. A book containing 32 articles on inflation accounting is therefore likely to be welcomed in universities and colleges, although it is rather surprising that a paperback edition has not been produced for student purposes. As a result it seems probable that the price of £14 will make this a library purchase rather than required student material.

The book is split up into ten sections. The sections containing four contributions or more are those dealing with general price-level accounting, current cost accounting theory, Dutch replacement value accounting, case studies in current cost accounting and British developments in current cost accounting.

The contributions on GPL accounting are provided by the UK Provisional Standard (PSSAP 7), Mathews, Staubus, and one of the Mechanical Engineering agencies. The article by Mathews on 'Price-Level Changes and Useless Information' was written about 15 years ago but it is still a very effective criticism of GPL accounting, although Gynther's writings on this subject have probably received more attention in Australia and elsewhere. I was rather surprised that no room was found for an article by Myddleton and/or Rosenfield as these writers have tended to be the strongest advocates of this method of accounting in the UK and the USA. As a result there was a lack of balance in this section, although the article by Staubus does provide a good summary of the objectives of the GPL accounting system.

The section on CCA theory includes articles by Edwards, Drake and Dopuch, Stamp, Yoshida, Bedford and McKeown, and Chambers. The articles by Edwards ('The State of Current Value Accounting') and Stamp ('Asset Valuation and Value to the Firm') provide a good introduction to CCA theory, although it is rather surprising to find Chambers' article included under this particular heading. Chambers has produced several articles that are very critical of the CCA approach, but the selected article is almost completely concerned with the advantages of Continuously Contemporary Accounting which cannot be classified as a current *cost* system.

Articles on Dutch replacement value accounting are provided by Mey, Klaassen, Burgert and Holmes. There is inevitably some repetitive material here, although the end result is a good overall impression of the advantages and disadvantages of the replacement value systems that are used by a small number of major Dutch companies. I have my doubts, however, as to whether the Dutch merit 63 pages as opposed to a few lines on South American systems.

The case study contributions are by Tritschler, McDonald, Gress and Gray. This section appears to be primarily concerned with the practicability of producing CCA figures. The evidence on this subject is rather sparse, although there has been some valuable material published in the last two or three years, especially in the USA where major companies have had to comply with the SEC's replacement cost disclosure provisions. It does take time, however, to gather together information for such a book, and these articles may not have been available at the time the contents were finalised.

The section on British developments includes articles by Baxter and Tweedie and extracts from ED 18 and the Hyde Committee Report (a complete copy of ED 24 is provided in the appendix). The two major articles should be helpful for student purposes although some evidence about the effects of CCA on profit figures (possibly from data produced by Phillips and Drew) would have provided a better overall picture. I would also have liked to see an article concerning the effects of CCA systems on pricing, taxation, stock exchange prices, dividend policy, wage payments etc. Some excellent material has been produced on this subject in Australia.

Smaller sections of this book are concerned with inflation accounting and the economy, on *not* accounting for inflation (the case for historical costs etc.), monetary gains and losses, some radical proposals (cash flow accounting etc.) and recent worldwide developments. The coverage is therefore comprehensive, although there have been some very important worldwide developments in the last year or so (especially in the USA) which have inevitably not been included.

This book of readings is therefore a welcome addition to the material at present available in universities and colleges which are providing an in-depth study of inflation accounting. The 32 articles are supplemented by a 31-page bibliography, and the end result is a good all-round survey of the state of the inflation accounting market in the early part of 1979. Inevitably those persons who are interested in inflation accounting will have different ideas about the articles that should be included in such a book, but nevertheless there can be little doubt that lecturers now have available a book that provides an extensive range of articles on most aspects of inflation accounting by an international panel of authors.

University of Exeter P. R. A. Kirkman

The European Communities. *T. R. Watts (Ed.).* Institute of Chartered Accountants in England and Wales, London, 1979. 92 pp. £3.95; **Business Enterprises in the EEC.** *J. C. Pollack and A. D. Jackson.* Institute of Chartered Accountants in England and Wales, London, 1979. 77 pp. £4.95; and **The Internationalization of the Accountancy Profession.** *W. J. Brennan (Ed.).* Canadian Institute of Chartered Accountants, Toronto, 1979. x + 172 pp. $10.50.

The European Communities is a small but valuable reference work dealing with the nature and effects of the Common Market and related institutions. There are useful introductory sections on the three communities and their various organs. Then, the work of the EEC is discussed in greater detail: customs union; free movement of persons, capital and goods; harmonisation of laws, accounting and taxation. Common policies in agriculture, money, transport, etc. are also briefly discussed. Finally, there are useful notes on such matters as the European unit of account and where to find more information.

I found the explanation of the institutions of the community and the nature of community law very clear. Directives on accounting and taxation, however, are outlined rather briefly: the consequent imprecision reducing usefulness. Consistent with the nature of the book, the treatment is factual throughout, rather than analytical or discursive. As an explanation of the EEC for accountants and accountancy students, this book is successful. I found only one unimportant error: the year of the revised draft seventh directive.

Business Enterprises in the EEC is another useful, if somewhat expensive, reference work. This is more technical than the above, and is full of detailed information about the nine members of the EEC and the three applicants. The subjects covered include types of company; formation requirements; exchange control; personal taxation; accounting, audit and filing requirements; corporate taxation; and sales taxes.

Much of this information is fairly difficult to find in an up-to-date form from other sources. In this book it is well presented. However, the nature of the information means that the book has built-in obsolescence. For example, although its content was finalised in November 1979, as I write in February 1980, the book's information about loss reliefs has already been outdated by the 1980 Budget in the Netherlands. It is to be hoped that frequently revised editions will be produced.

A third new book, *The Internationalization of the Accountancy Profession*, is a selection of brief chapters by eleven famous men connected with international aspects of accounting. John Brennan, the former secretary of the International Accounting Standards Committee (IASC), provides a useful preface and summary comments at the end of sections.

At many points the book is imprecise to the point of inaccuracy. An amusing example may be found in the preface: 'This internationalization process... stems from the original Fra Pacioli days in Italy (about 1400 AD)' (page vii). At other points it is repetitive, assertive or dull. However, some chapters provide facts about international bodies which are difficult to cull elsewhere.

The first chapter is about the International Federation of Accountants (IFAC) and its predecessor. There are useful descriptions of the history, purposes and programme of these bodies and of the Accountants' International Study Group. Chapter 2 is a clear and detailed description by Victor McDougall of the Union Européene des Experts Comptables (UEC). Chapter 3 is an anecdotal and fragmentary discussion from the Dutch viewpoint. However, the coverage of the Tri-partite Study Group which sets accounting 'standards' is valuable.

Chapter 4 is a reprint of a 1976 *Accountancy* article by Sir Henry Benson about the early years of the IASC. The next chapter is a description of more recent IASC activities. This contains useful information but, like most chapters, it is descriptive and assertive rather than analytical or well-argued. Chapter 6 concerns auditing standards, and Chapter 7 is a brief description of the work of the United Nations in the area of accounting. Brennan provides a good conclusion for this section of four chapters, introducing some new ideas.

Chapter 8 by Gerhard Mueller is about academic research in international accounting; it is somewhat dry and disjointed. Chapter 9 is about research by professional bodies. This consists mainly of a description of the Canadian Accounting Research Committee—a fairly esoteric subject. The next chapter by Professor Stamp contains real analysis and interest. It provides a strong breath of fresh air. His description of the ineffectiveness of international standardisation lacks none of the 'intestinal fortitude' which he complains about in others. The final chapter is repetitive of earlier sections but raises an interesting proposal for standardisation through the agency of the OECD. The appendices provide reproductions of the constitutions and membership lists of IFAC and the IASC.

The book provides some useful information and an insight into the thinking of influential men. However, the several criticisms made above suggest to me that the foreword may be exaggerating when it claims that the book 'will go down in the annals of the history of the accounting profession'.

University of Exeter C. W. Nobes

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Retirement of Professor Harold Edey

Professor Harold Edey of the London School of Economics retires in 1980 after 31 years as an academic accountant. At a farewell dinner held at the School on July 9, 1980, Peter Bird, professor of accountancy at the University of Kent at Canterbury and a member of the Council of the Institute of Chartered Accountants in England and Wales spoke as follows:

The reporting accountant usually faces two major problems—accounting for uncompleted transactions and selecting what to include in his report, and so what to omit from it.

But in reporting on the occasion of Harold Edey's retirement the problem of accounting for uncompleted events is not supposed to arise. I am reporting not on a single period but on a supposedly terminated career. However we hope that in fact Harold will not fade from the academic scene too rapidly or too completely. We are come to praise Harold, not to bury him. I know enough of Harold to be confident that we have not heard the last of him, but that he will follow the tradition of many previous LSE retirements in which apart from the holding of a retirement dinner everything seemed to continue much as before.

Nevertheless the identification and valuation of work-in-progress are the least of my problems to-night. My real difficulty lies in selection. An exhaustive curriculum vitae would be very impressive, but would tax us all and probably embarrass Harold himself; and even then it might not achieve what I am seeking, which is to draw out the nature of Harold's special contributions.

I thought first of the fact that Harold's name will stand for ever in the record books because the nature of the game has so changed that no one can ever do again many of the things he has done. Where he has been the first, the most that anyone else can do is to follow in his footsteps. Harold was the first academic member of the Council of the Institute of Chartered Accountants in England and Wales, the first Pro-Director of the London School of Economics, and the main instigator of the first viable Masters course in Accounting in Britain. In other areas, the environment has so changed, partly through Harold's own influence, that his record will never be beaten or even equalled. In particular, a uniquely large proportion of the current British professors of Accounting have been his students at some point in their careers; many of them are here tonight and others have sent their greetings on this occasion.

But there is one particular achievement that I think we should focus our attention on tonight. Not very long ago academic accounting was scorned by the accountancy profession and barely tolerated if noticed at all in the academic world. Since then a wind of change in the profession and the popularity of accounting among students has done something to improve the situation. But it has been Harold Edey who has made the greatest single contribution towards making academic accounting acceptable and respected in both the academic and the professional worlds. This role of bridge-builder must have felt uncomfortable and thankless at times. He must have encountered those academics who believe that service on any professional committee will inevitably contaminate your intellectual integrity, and those professionals who found it difficult to believe that academics have a contribution to make towards the solution of practical problems.

In the professional world, Harold has won respect for the academic viewpoint through his service on the Institute Council for the last eleven years, and associated with that his work over that same period as a founder member of the Accounting Standards Committee, as a member of the Institute's Education and Training Committee, and as Chairman of the Board of Accreditation of Colleges and Courses.

In the academic world, accounting has often been fortunate in coming first to the notice of other academics through Harold's activities—for instance in his capacity as the first Pro-Director of LSE (1967–70), as Co-ordinator of the LSE Library Appeal, as Chairman of the University Board of Studies in Economics (1966–71), as a member of the Council for National Academic Awards (1965–73), as member of the Academic Planning Board and Governor of the London Business School (1961–71)—or through his forty published works many of which have an economic or legal flavour to them.

But whether among his academic accounting colleagues, other academics or professionals, and whether inviting them to consider the mysteries of accounting or astronomy or linguistics, it has been Harold being himself that has generated the most respect and affection both for him and, by a sort of reflected glory, for the rest of us in academic accounting circles. We are therefore indebted to him in ways that can never be repaid.

Developments in Internal Auditing

A. D. Chambers

> Most persons have no concept of the functions of internal auditing. Many think of it as identical with auditing performed by public accountants, with this exception that it is performed by an organisation's own employees. It is true that in many companies, internal auditing does answer this description. But in other corporations, internal auditing goes far beyond the mere verification of records and transactions. In such corporations, which I like to think of as being the most modern, the internal auditor performs three major functions:
>
> 1. he acts as an arm of management
> 2. he rounds out and perfects the system of internal control
> 3. he directly participates in the verification of financial statements.
>
> *It is as an arm of management that internal auditing has its most brilliant future.*
>
> J. B. Thurston[1]

Many of the developments in internal auditing discussed in this paper may be seen as developments toward professional status. It is outside the scope of this paper to make the case for or against internal auditing attaining the attributes of a profession: suffice it to say that no consensus has yet emerged and that doubts are expressed by the client group, management, who frequently sees no advantage in separating internal auditing from management in general. In view of this continuing debate, it is considered useful to relate the developments in internal auditing to those features which sociologists have come to regard as indicative of a developing profession.

Professionalism

Autonomous expertise and *the service ideal* are perhaps the most distinctive overall attributes of a profession[2] although here we apply a more detailed breakdown of these attributes to internal auditing.[3] Certainly, the service ideal is regarded as the pivot around which the moral claim to professional status revolves: the case for professional status could only be made out if the occupational group could render a significantly more effective service by adopting the substance and symbols of a profession.

Professions have *a systematic body of knowledge*. This has been defined for internal auditing,[4] though sparsely compared to the equivalents of the accounting profession.[5,6] A profession also has *authority recognised by the client or user*; increasing recognition is being given to internal auditors by management, external auditors and others. New internal audit Standards[7] claim that 'compliance with the concepts enunciated by these Standards is essential before the responsibilities of internal auditors can be met.'

Professions enjoy *the sanction of the community* often evidenced in protective legislation. This is not yet well developed for internal auditing though internal audit is now required by law in UK local government[8] whose statutory auditors are charged with directing attention to the adequacy of internal audit.[9] It has also been suggested that all listed companies should be required to maintain an internal audit[10] although at present only approximately half of them do so. It is arguable that Building Societies are also required to maintain a satisfactory internal audit.[11] More generally there is a striking development in awareness by the public of the desirability for effective control and audit within organisations and the development of audit committees is part of this process.

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[1] Thurston, J. B., '1941—Modern Internal Auditing has Just Been Born', speech of first president of The Institute of Internal Auditors at their inaugural meeting. Reprinted in *Internal Auditor*, Summer 1966.

[2] Wilensky, H., 'The Professionalization of Everyone', *American Journal of Sociology*, Vol. 7, No. 2, September 1966, pp. 137–158.

[3] Greenwood, E., 'Attributes of a Profession', *Social Work*, July 1957, pp. 45–55; reprinted as 'The Elements of Professionalization', *Professionalization*, edited by H. Vollmer and D. Mills, (Englewood Cliffs, NJ; Prentice-Hall).

[4] Gobeil, R. E., 'The Common Body of Knowledge for Internal Auditors', *Internal Auditor*, Vol. 29, No. 6, Nov/Dec 1972, pp. 20–29.

[5] Roy & MacNeil, *Horizons for a Profession: The Common Body of Knowledge for Certified Public Accountants* (AICPA, 1967).

[6] Solomons, D. & T. M. Berridge, *Prospectus for a Profession*, Advisory Board of Accountancy Education (London: Gee, 1974).

[7] *Standards for the Professional Practice of Internal Auditing*, (Institute of Internal Auditors, 1978).

[8] *The Local Government Act* (London: HMSO, 1972); see especially Statutory Instrument No. 1169 of The Department of the Environment: 'Local Government, England & Wales: The Accounts and Audit Regulations' (D. of E. 18241).

Professions have *regulative codes of ethics* and this is true of internal auditing;[12] more recently the professional Standards state that the internal auditor is to exercise '*due professional care*' and outline what this amounts to.[13] In addition to providing a code of practice for internal auditors, these Standards are also intended to impart an understanding of the role and responsibilities of internal auditing to all levels of management, boards of directors, society, legislative bodies, and related professional organisations. They are standards of best practice as perceived by the world's leading internal auditors. As actual practice tends to lag behind standards they are, for many, a good guide to the future of internal auditing.

The quotation at the start of this paper referred to internal auditing as *an arm of management*—an emphasis also encapsulated in such slogans as '*the eyes and ears of management*' and '*aid to management*'. This crystallised the change of emphasis of internal auditing from a check on detailed *compliance* with laid down accounting procedures on behalf of the chief accountant, to an aid to management in achieving *efficiency and effectiveness in all its operations.*[14] This evolution has not been achieved in all quarters and one still encounters the old style internal auditing; for instance it is the finance officer in UK local government who by law maintains an internal audit.[15]

The crucial change of emphasis in the new Standards is that internal auditing is now seen as not just *an arm of management* but as having responsibilities to *the board* and management (our italics). 'The board' is defined as any designated governing body of an organisation including audit committees of boards and legislative bodies in government. The Standards refer to internal auditors' increasing accountability and contact with the board as an evolving concept of internal auditing, and to internal auditing as an independent function for the purpose of *serving the organisation* (our italics).

This opens the way for internal auditing to serve *the organisation as a whole* and not merely the management of the organisation. It places particular emphasis upon providing an independent service to the higher levels of the organisation: there are already many instances where the internal auditor provides a service to the audit committee and has responsibilities to that committee.

There are other ways in which internal audit might provide a service to the organisation as a whole rather than to management only. In countries where there is a statutory right of workers' representatives to management information, internal auditors might provide independent reassurance to workers' representatives on the reliability of information so presented. Internal audit might also be relied upon by agencies such as the SEC. It has also been suggested that internal audit might take over certain elements of the external audit task.[16,17]

It appears clear that internal audit is manoeuvring into a position from which it is able to evolve further in these directions; it is a position which reinforces the need for independence from management and thereby fosters the professional idea.

Responsibilities

If the recipient of the internal audit service is changing, so is the nature of the service. The Standards hold that the internal auditor should not assume regular operating responsibilities and international surveys in 1968 and 1975 showed that the proportion of internal audit departments that had regular responsibilities for certain line control or accounting functions had dropped from 41% (1968) to 27% (1975).[18] The position is not so developed in the UK where, in 1975, over two thirds of internal audit departments carried out regular internal checks.[19]

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[9] The Department of the Environment, '*Local Government Act 1972; Audit Provisions*' Circular 79/73, 1973.

[10] Briston R. and R. Perks, 'The External Auditor—his Role and Cost to Society', *Accountancy*, November, 1977.

[11] *The Building Societies Act* (London: HMSO, 1962) (see especially paragraphs 76.1 and 79).

[12] *Code of Ethics* (The Institute of Internal Auditors, 1968).

[13] IIA 1978, *op cit.*

[14] In this paper, auditing terms are defined as follows: Compliance auditing: determining whether actions have been in accordance with internal controls and procedures and with applicable external laws, regulations and practices.
Efficiency auditing: determining whether resources (personnel, property, etc.) are being utilised as optimally as is practical (the ratio of inputs to outputs).
Effectiveness auditing: determining whether resources are being used to proper effect (the relationship of outputs to the desired goals of the enterprise).
Operational auditing: the audit of operations outside the financial and accounting areas (such as personnel, distribution, production).

[15] Local Government Act, 1972.

[16] Briston and Perks, *op cit.*

[17] Crabtree, M. G., 'Extending External Audit Reliance upon Internal Audit Work', *Proceedings of The Third Annual Conference on Recent Developments in Internal Auditing* (London: City University Business School, 1978), pp. 117–125.

The Standards also state that internal auditing is concerned with any activity of the organisation and goes beyond examining accounting controls, records and financial statements and reports. They also refer to the 'economical and efficient use of resources' and 'the accomplishment of established objectives and goals as being of legitimate interest to the internal auditor.[20] This is a two-dimensional evolution: first, internal auditing is evolving from an audit of compliance with internal and external procedures and regulations to an appraisal of efficiency and effectiveness; secondly, it is embracing the audit (whether compliance, efficiency or effectiveness auditing) of all operations and not merely accounting and financial matters. This is witnessed by the successive revisions of The Statement of Responsibilities of the Internal Auditor[21] which were the precursors of the new Standards. The 1947 and 1957 editions carried the clause 'internal auditing ... (reviews) accounting, financial and other operations' but only the 1947 edition included the clause 'internal auditing ... deals primarily with accounting and financial matters but ... may also properly deal with matters of an operating nature'. By 1971 both these clauses had been dropped in favour of 'Internal auditing ... (reviews) operations'. So, while in 1947 the accent was on financial accounting matters, by 1957 there was a balance between these matters and the audit of other operations (usually called '*operational auditing*'); and by 1971 financial matters were simply regarded as one of many operations, not meriting special mention. The quotation at the start of this paper reflects the 1940s approach but projects forward to this early seventies approach; it stops short of the shift to *serving the entire organisation* rather than management only.

The assumption of non-financial audits is evidenced in available data. By 1968 only one fifth of internal audit departments restricted their audit interest to financial aspects and by 1975 this was down to a mere 2%. In terms of relative proportions of audit effort, by 1975 only 48% of internal audit work worldwide was devoted to financial audits, the remainder being classified as operational audit work.[22] These figures are crude in that they do not distinguish between the proportions of audit work concerned with *compliance* and the proportions which are concerned with *efficiency* and *effectiveness*. They are also based on imprecise definitions of operational auditing: it is likely, for instance, that many internal auditors would classify an audit of production as operational rather than financial, even if the data upon which the audit were based were financial and accounting data. Other data are available which remedy these defects;[23] from Figure 1 we can conclude that *operational* audits where the data reviewed is *non-financial* amount to 44% of internal audit effort. This confirms an extension of internal auditing into operational auditing.

Figure 1 also shows that just under a third of audit effort is concerned with *efficiency* and *effectiveness* rather than *compliance* and that this proportion is higher where the data reviewed are non-financial. It has also been shown that over a recent five year period the proportion of audit effort expended on efficiency and effectiveness auditing of non-financial aspects has doubled, that most corporations now report higher percentages and that more corporations now report some activity in this area.[24]

In both international and UK surveys just over 80% of internal audit departments have been shown to examine *all* their organisations' activities.[25] Certain activities show up as currently being audited by more internal audit departments than previously: the principal ones are EDP (79% in 1975; 64% in 1968), management information systems (60% in 1975; 48% in 1968) and organisational control (63% in 1975; 44% in 1968). The interesting feature of these audit areas is that they indicate an extension of audit activity not merely into non-financial operations such as production and distribution, but into *company wide service activities.*

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[18] *Survey of Internal Auditing, 1975* (Florida: Institute of Internal Auditors, 1976,a).

[19] *A Survey of Internal Auditing in the United Kindom* (London: Institute of Internal Auditors, 1976,b), p. 10.

[20] IIA, 1978, p. 4.

[21] *The Statement of Responsibilities of the Internal Auditor*, (The Institute of Internal Auditors, 1947, 1957, 1971).

[22] IIA, 1976,a, p. 9.

[23] Miguel, J. G., J. S. Shank and V. Govindarajan, 'Extending the Audit Function', Harvard Graduate School of Business Administration, *HBS 76-39*, November 1976, pp. 5, 6 and 10.

[24] Miguel, *et al*, *op cit*.

[25] IIA 1976,a, p. 10; and 1976,b, p. 11.

Figure 1
Percentages of Internal Audit Activity

	Types of Audit Data		
	Financial	*Non-financial*	*Totals*
Compliance-Internal	35.90	21.98	57.88
Compliance-External	7.30	4.99	12.29
			70.17
Efficiency	7.03	9.18	16.21
Effectiveness	5.59	8.03	13.62
			29.83
Totals	55.82	44.18	100.00

Source: Miguel, *et al* (note 23).

A possible future trend may be an internal audit review of *corporate attitudes*, advising whether these are consistent with the overall objectives which are understood and operated throughout the organisation. Attitudes (to innovation, work, risk, resource stewardship, staff development and so on) are principal determinants of corporate success and failure—yet they are often left to chance and indeed very rarely subjected to independent review. Most auditors consider these should be within the scope of internal audit.[26]

Several other developments affect the *modus operandi* of the internal auditor. First, internal auditors are increasingly aware of the importance of concentrating audit effort where the risk is greatest.[27] Secondly, more audit effort is being expended at the *pre-event* stage—such as the audit of a computer system or a contract before it is implemented. It is more constructive to raise audit points at the design stage and is not considered prejudicial to the objectivity of subsequent audits.[28,29]

Linked with the evolution from compliance to efficiency and effectiveness auditing is a shift from an inspection style to an *advisory* and even a *participative, teamwork approach* with the auditee.[30] The inspection style, epitomised by surprise audit visits, is rarely necessary even for compliance auditing and probably never necessary for efficiency and effectiveness auditing. Two-thirds of internal audit departments now avoid the surprise visit.[31] Most internal auditors operate in a constructive, advisory style, but the participative approach has been described as 'the problem-solving partnership which may well be the light at the end of a dreary tunnel.'[32]

Internal auditors have low job satisfaction—significantly less than middle-level managers and external auditors.[33,34,35,36] It is partly in this context, and also due to a desire to be more constructive, that the participative audit approach is being experimented with. Mints found that 47% of auditees held unfavourable images of the inspection-oriented internal auditor, 21% of the advice-oriented internal auditor but only 9% of internal auditors with a participative approach who were concerned to assist auditees in achieving their goals.[37] In an experiment with participative auditing, internal auditor work satisfaction increased by between 13% and 22% when the auditor helped in the implementation of audit recommendations.[38] It is arguable that this approach violates the new internal audit Standards which state that assuming responsibility for the design, installation, or operation of systems is not an audit function and is presumed to impair objectivity;[39] but it is not clear why it is held that making audit recommendations does *not* violate audit objectivity whereas involvement in the implementation of these recommendations *does* violate objectivity.

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[26] Chambers, A. D., 'The Internal Auditing of Research and Development', *R & D Management*, February 1978,a, pp. 95–99.

[27] Chambers A. D., 'Risk Management and the Internal Auditor', *Risk Management*, May 1978,b, pp. 34–42.

[28] IIA 1976,a, p. 63; and 1976,b, p. 29.

[29] Chambers, 1978,b.

[30] Mints, F. E., 'Behavioural Patterns in Internal Audit Relationships', *Research Report No. 17* (Institute of Internal Auditors, 1972); based on a Ph.D. thesis which is also available.

[31] IIA, 1976,a & b.

[32] Mints, *op cit.*

[33] Porter, L. W., 'A Study of Perceived Need Satisfaction in Bottom and Middle Management Jobs', *Journal of Applied Psychology*, Vol. 45, 1961.

[34] Strawser, R. H., J. M. Ivancevich & M. C. Lyon, 'A Note on the Job Satisfaction of Accountants in Large and Small CPA Firms', *Journal of Accounting Research*, Autumn 1969.

[35] Smith, J. H. and W. C. Uecker, 'Can Auditors find Job Satisfaction?' *Internal Auditor*, October, 1976.

[36] Chambers, A. D., 'Perceptions of Internal Auditing', *Personnel Review*, Autumn 1978,c, pp 41–51.

[37] Mints, *op cit.*

[38] Allen, B. L., 'Can the Participative Audit Approach Improve Job Satisfaction?' *Internal Auditor*, August 1978, pp 59–64.

The swing from compliance auditing to efficiency and effectiveness auditing questions whether internal control is always appropriate as the dominant theme of the internal auditor. The ability of internal audit to fulfil an advisory, operational auditing role is dependent upon the existence of *shared values and orientations amongst the individuals involved, viz* '... the production manager is far more likely to view the development of sound systems of control as being functional for the achievement of his principal aims, e.g. achieving production targets and deadlines at reasonable cost, than the research manager who may be principally concerned with the generation of new ideas and research reports ... this calls for explicit recognition on the part of the internal auditing profession that what they regard as fundamental precepts may be viewed as impediments by those whom they wish to help and advise'.[40] For this reason it is possible that internal auditing may move away from a control-oriented approach.

The extension of internal auditing to efficiency and effectiveness auditing in non-financial areas will either mean jettisoning compliance auditing or carrying it in tandem with the new auditing. It should be remembered that managements certainly still expect the internal auditor to be effective in detecting material error and fraud. If the auditor looks only at the efficiency of the system he may not look at the transactions which have passed through the system and he may not verify the existence and value of assets and liabilities. If internal auditing were to reject compliance auditing (and the concomitant substantive testing and verification work) it would be turning its back upon what most managements consider it is there to do. The increasing public interest in corporate compliance is an indication of the importance of the compliance objective of internal auditing.

The middle view is that the assumption of operational auditing responsibilities of a non-compliance variety does *not* imply the dropping of the traditional attesting for compliance but is merely a recognition that, on its own, attesting for compliance is a very inadequate service for internal auditing to offer in the future. The problem with this viewpoint is that there may be serious and insoluble role conflicts if an auditor tries to be a compliance auditor as well as an efficiency and effectiveness auditor.

Organisation

One of the hallmarks of a profession is a *professional culture represented by an interactive system of organisations* which interact in the form of mutual support and overlapping memberships in order to cultivate the values and career concepts of the profession.[41] Three organisations are perceived as existing and interacting within this model of a profession. The first is *the organisation which renders the actual service.* In the case of internal auditing this is the internal audit department. Here, internal auditing fares well compared with many other professions and particularly with most professions whose members function as employees of organisations. In particular the internal audit department already has a large degree of independence from the rest of the organisation to determine its programme of work and its method of working; indeed this is seen as being necessary to achieve audit objectivity.

The future may see a reinforcement of the organisational independence of internal auditing within the organisation. If the beneficiary of the internal audit service comes to be accepted as the *organisation as a whole* rather than merely management, there will be a growing need for independence of internal audit from management as there may be parts of the audit task which will be a review of management on behalf of non-management parts of the organisation. Even today it is recognised that internal audit needs independence from management but this is currently interpreted as meaning independence from the management of a particular audit area rather than independence from management in general for whom the service is currently being provided.

Increasing organisational independence for internal audit will have repercussions on staffing and on reporting relationships. For the old style internal auditing, which attested compliance with financial and accounting procedures, it might have been appropriate for the auditor to be on the chief accountant's staff although this made it impractical to check on compliance by the chief accountant himself. Within UK local government, internal auditing started in this way as a protection for the chief finance officer. With the advent of operational auditing, it is appropriate for the internal auditor to report outside the accounting function and preferably above the level of the heads of the various operations. If internal audit now develops further to embrace the review of management on behalf of the entire organisation, it becomes inappropriate for the internal auditor to report to management and more appropriate for him to report to an audit committee of the Board or to the Board itself where the Board has a number of non-executive directors.

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[39] IIA, 1978, pp. 100–1.

[40] Morgan, G., 'The Paradoxical Nature of Internal Auditing', unpublished paper, Department of Behaviour in Organisations, University of Lancaster, 1976.

[41] Greenwood, *op cit.*

Chief internal auditors increasingly report to vice-president/director level, or higher. The worldwide proportion had increased to 54% in 1975 (1968: 45%), and a further 5% reported to audit committees (nil in 1968).[42] 63% of UK chief internal auditors reported at director level in 1975.[43] Parallel figures for West Germany and Austria were 85% (1973) and 90% (1975) respectively.[44,45] There has been a worldwide decline in the proportion of chief internal auditors reporting within finance (73% in 1968 to 58% in 1975), but in the UK there is still a preponderance reporting within finance (89% in 1975) though an earlier survey indicates that the percentage may have declined.[46] It is likely that the future will see a continuance of these trends for reporting to be above functional levels and outside finance and accounting.

The remaining two forms of organisation found in the professions are *the associations which provide group consciousness*, and *the centres which replenish the profession's supply of talent and expand its fund of knowledge by means of education and research.* In the best developed professions the latter occurs in the universities. There is now a fresh interest in internal auditing in US universities, and internal auditing is now taught at university and polytechnic level in the UK and in France.[47]

It is likely that there will be a further development of The Institute of Internal Auditors (IIA) as the association which provides group consciousness, and the continued eclipse of the accounting bodies in this respect. The IIA has grown from 24 members in 1941 to almost 3,000 in 1955, almost 6,000 in 1965, 12,000 in 1975 and currently in excess of 17,000. UK membership of this body is well over one thousand. Increasing membership has provided the opportunity as well as the requirement for increased provision of services to members. The turnover of the world HQ of the IIA is currently well in excess of $2m with a staff of over 50—or approximately one fifth as large an operation as the ICAEW. The local UK operation of the IIA employs three full time members of staff. The picture of the UK and world-wide operations is one of steady expansion which shows no sign of levelling off. Within the UK the critical size is being reached beyond which a much more professional service to the membership is feasible.

Despite this, accountants dominate internal auditing and are likely to continue to be the main discipline group though less dominant than at present. 70% of UK graduate internal auditors in the UK either have or are obtaining accounting qualifications.[48] 75% of all UK internal auditors have an accounting background.[49] In the US, while only 6% of internal audit departments expect their staff to have the CPA designation, 53% expect them to have a college degree in accounting.[50]

Growth

In 1975 only 56% of UK industrial and commercial concerns had internal audit departments as compared with 100% of the local authorities and 97% of public utilities.[51] In keeping with the current emphasis on internal auditing it is reasonable to anticipate a continued expansion of internal audit provision within industry and commerce and these figures show that there is still ample scope in the private sector.

It is interesting to examine the growth of internal audit coverage within organisations. 343 organisations responded to the 1975 worldwide survey of 800 organisations selected randomly from the membership of the IIA. These companies employed 3,870,714 people and had 4,156 internal auditors—a ratio of one auditor to every 931 staff. In 1968 there were 308 respondents employing 3,913,086 including 3,900 internal auditors—a ratio of 1:1003.[52] In a UK survey with 387 respondents, 3,359,992 were employed with 2,801 auditors—a ratio of 1:1200.[53] The German figure was constant in 1963 and 1973 at 1:1429.[54]

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[42] IIA, 1976,a, p. 23.

[43] IIA, 1976,b, p. 5.

[44] Hengt, F. J. 'Internal Auditing in Europe', *Proceedings of the First Conference on Recent Developments in Internal Auditing* at the Graduate Business Centre of The City University, February 24-25, 1976, pp. 39–60.

[45] Deutsches Institut für Interne Revision, e.v., *Die Interne Revision in der Bundesrepublik Deutschland* (Erich Schmidt Verlag, 1973).

[46] Chambers, A. D., 'The Structure of Internal Auditing', *Accountancy*, October 1974, pp. 40–42.

[47] Chambers, A. D., 'Internal Auditing at a University—An Example in Context', *Accounting Review*, January 1978,d, pp. 143–147.

[48] Chambers, A. D., *Employment in Internal Auditing with Special Reference to the Graduate, Research Report No.* 3. (The UK Institute of Internal Auditors, 1977).

[49] IIA 1976,b, p. 6.

[50] IIA 1976,a, p. 24.

[51] IIA 1976,b, p. 1.

Worldwide, it is apparent from these figures that there has been a growth of less than 7% *in the proportion of internal auditors to all employees.* With the *caveat* that total numbers of internal auditors have been increasing and are likely to continue to increase as more organisations establish internal audit functions, it must nevertheless be true that the adoption of operational auditing and efficiency and effectiveness auditing has been by means of a reallocation of audit effort away from financial and compliance auditing. This trend could have a significant impact on the future job market for conventionally trained auditors.[55] This may not mean that the protective role of the internal auditor is no longer being discharged satisfactorily: a justification for the systems approach to internal auditing (which is concerned with efficiency and effectiveness as well as compliance) is that it provides greater protection by identifying systems weaknesses even if it does not always spot particular incidents of system violation.

The main growth periods of internal auditing have been times of economic restraint when managements have less opportunity to increase profits by increasing sales, and so have sought to control costs and have seen internal auditing as an effective agent of control. Times of economic constraint are also times when the community presses for greater accountability. Internal auditing blossomed in the UK public sector during the 1920s and early 30s. In the US the IIA was established in the 1940s. In the 1970s internal auditing has experienced a new growth.

Research areas

There are several issues which not only merit attention but which prejudice the future development of internal auditing on account of our low level of understanding.

Internal auditing is said to be the independent appraisal of the effectiveness of internal control,[56] yet the accepted definition of *internal control* is much broader than the generally accepted concept of *managerial control* and seems to embrace almost all aspects of management, *viz*, 'Internal control comprises the plan of organisation and the coordinate methods and measures adopted within a business to safeguard its assets, check the accuracy and reliability of its accounting data, promote operational efficiency, and encourage adherence to prescribed managerial policies.'[57] Currently unresolved issues include whether it is possible for internal auditors to be specialists over such a large area. Alternatively, internal auditing may be the review of the management process in its entirety, the concept of internal control being superfluous. If the concept of internal control represents a special orientation of the internal auditor, this would imply that he pursues this orientation regardless of the priorities of management, so reducing his value to management and fostering hostility between him and management.

Secondly, let us consider *independence and objectivity.* Many would say that the internal auditor can never be completely independent.[58] Indeed external auditors call themselves independent auditors to contrast themselves with internal auditors There are degrees of independence and it is a truism that no auditor, internal or external, can be perfectly independent. Research is needed to establish which elements of independence are essential features of satisfactory internal auditing, and which influences determine whether or not this independence and objectivity is achieved. Currently it has not been clearly established in what way the internal auditor should be independent—independent of management, independent of management's systems, or simply of an independent or objective frame of mind. There is also confusion as to whether independence is a desirable end or merely a useful means of achieving objectivity.

The new Standards emphasise the importance of independence and objectivity: 'Objectivity is presumed to be impaired when internal auditors audit any activity for which they had authority or responsibility', and 'The internal auditor's objectivity is not adversely affected when the auditor recommends standards of control for systems.' Hence it is appropriate to provide advice and assistance on the incorporation of controls during systems design and installation. But assuming responsibility for the design, installation, or operation of systems is not an audit function and is presumed to impair objectivity.

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[52] IIA 1976,a, pp. 69, 70.

[53] IIA, 1976,b, p. 5.

[54] Hengt, p. 48.

[55] Miguel, *et al*, p. 13.

[56] An attractive alternative definition discussed at the 1978 ICAEW seminar on internal auditing is that internal auditing is the review of information flows to the monitoring function of a system.

[57] The American Institute of Certified Public Accountants, *Internal Control–Elements of a Co-ordinated System and its Importance to Management and the Independent Public Accountant*, 1948.

[58] Davison, I. H. 'Do Auditors give Value for Money?', *Accountancy*, January, 1978.

While these sentiments represent the best practice of internal auditing today they have not been the subject of rigorous study. It is possible that they are not correct. Working on the basis that there is no such thing as complete independence, independence would be compromised to a degree by *any* involvement with the system being audited. Thus, recommendations of standards and criteria for control systems and the provision of advice and assistance for the incorporation of controls would appear, *prima facie*, to compromise independence to an extent; it is, however, more important to be constructive than to endeavour to achieve total independence and objectivity at all costs. It can however be argued that, by going so far, the auditor is sharing responsibility for the design of the system which the Standards do not allow on the ground that this is 'presumed to impair objectivity'. To a degree it is bound to do so, but there is no clear evidence to indicate that this is not justified, in view of the extra service the internal auditor is able to render and the improved job satisfaction he obtains through this type of participative auditing.

Thirdly, consider *role conflict*. Some studies have been conducted in this area[59,60] but important issues remain unresolved. First, it is necessary to establish the areas in which role conflict exists. There are at least three types of role conflict:

1. Conflict between the role of the auditor and the role of the auditee (for instance, where the auditor has a control orientation which is not shared by the auditee).
2. Conflict between the *auditor's* perception of his own role, and the *auditee's* perception of the auditor's role (for instance, the auditor may see himself as a constructive, welcome, friendly advisor; whereas the auditee may see the auditor as a destructive, unwelcome, unfriendly snoop or policeman).
3. Possible conflict inherent within the auditor's own role (for instance he may be expected to be both an inspector *and* a constructive advisor).

The third is perhaps the real sociological role conflict but the others are just as serious. They become more important as the auditor expands his role from being concerned with *compliance with accounting control* to being concerned with *efficiency and effectiveness in all operations*. It is possible that the role conflicts are so fundamental as to make it impossible for the auditor to succeed in his expanded role. At least, to date it has not been satisfactorily demonstrated that this is not so.

Research is now also needed into the compatibility of providing a *service to the entire organisation* with providing a *service to management* which is a more traditional view of internal auditing.

Education

The IIA is launching a UK Diploma in Internal Auditing. Initially this will be of equivalent standard to a professional qualification, and ultimately it might become a prerequisite for membership of the IIA. It will be the UK equivalent of the IIA's Certified Internal Auditor (CIA) program launched in 1972; by 1978, 1,112 candidates, of over 5,600 registrants, had completed the four-part CIA examination.[61]

UK internal auditors were canvassed in 1975 on their perception of the need for such a qualification and 40% thought there would be a need.[62] By 1978 the response to an exposure draft was over 90% in favour.

There is currently a resurgence of activity, but internal auditing attracts less academic interest than do most other facets of business. Internal auditing was once more actively taught in US universities although there is now much more university-based research. The high level of interest in internal auditing in the 1950s at US universities failed for related reasons: the profession was not sufficiently strong to support it; student

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[59] Morgan, G. & B. Pattinson, *The Role and Objectives of an Internal Audit—A Behavioural Approach*, The Chartered Institute of Public Finance and Accountancy, January, 1975.

[60] Hogan, D. J., 'An analysis of the problems of expanding the role of the internal auditor', *Proceedings of the Second Annual Conference on Recent Developments in Internal Auditing* at The City University, Business School, May 24 1977, pp. 23-57.

[61] 'Facts and Figures', *Internal Auditor*, Vol. 35, No. 6, December 1978, p. 15.

[62] IIA, 1976,b, p. 31.

demand did not materialise for internal auditing had a poor image as a possible career; teaching suffered from a dearth of sound published material.[63]

In the UK internal auditing has now been taught at Masters degree level in one university for five years: approximately sixty students have taken the subject, including a number of academics from polytechnics and elsewhere, as well as practising internal auditors. Internal auditing is taught at a similar level at CESA in Paris.

While we can expect development of work in internal auditing at universities and polytechnics, it is clear that this depends on practical encouragement from the associations which represent internal auditing and from audit departments themselves.

Staffing

Two staffing issues have impact upon the development of internal auditing. First, use of *specialists in internal auditing*—a trend already discernible. Secondly, *length of stay* of the internal auditor in the internal audit department: on this there is currently no available evidence of a favourable trend developing.

In Germany it is recognised that trends in the development of internal auditing will increase the demands made on the qualifications and efficiency of specialists. There, 70% of audit departments assign audit work on a specialisation basis and 40% use non-audit specialists, from within the company and from outside, to supplement audit teams where necessary. These specialists are mainly EDP or taxation experts, lawyers and engineers.[64]

The extension of internal auditing into areas of efficiency and effectiveness of *all* operations will loosen the grip of the accountant who has monopolised job opportunities in internal auditing. By 1975 accountancy was still the most important background for an internal auditor but its priority had slipped from 65% in 1967 to 56% in 1975. Data processing had risen from a zero rating in 1968 to 19% in 1975. Engineering scored 4% in 1968 and 5% in 1975. These figures are based on the number of total mentions of these specialisms as categories of past experience from which internal auditors had been selected.[65]

Within this scenario of the employment of specialists in internal auditing, the developing role of computer specialists is interesting. A recent CIPFA study is said to have found that only 16% of public sector organisations employ computer audit specialists in their internal audit departments and that 28% of their audit departments *make no audit checks of computer-based systems* even though 96% of these organisations use the computer for financial systems.[66] A 1975 survey mainly of the UK private sector found that only 29% of internal audit departments employed specialist computer auditors and only 76% of audit departments audited computerised systems.[67] When it is considered that only about 56% of large industrial and commercial companies had internal audit departments at the time (they are almost universal in the public sector) it is apparent that specialist computer auditors are as rare in the private as in the public sector.

Internationally, just under half of audit departments employ at least one internal auditor who has been trained to write computer extract programs, and 8% of audit staff are specialist computer auditors.[68] The UK may be lagging behind practice elsewhere and it is likely that an increasing development and employment of computer audit specialists will become one of the most conspicuous auditing trends.

In the United States it is popular to say that all future internal auditors must be computer auditors. As most systems will be computerised there will be no place for the auditor who is not able to audit computer-based systems, but there will continue to be a developing need for the computer audit specialist who is competent to conduct the internal audit of the computer operation as well as advise on the more technical problems encountered by his colleagues during their audits of computer-based systems.

An analysis of 200 staff who had recently terminated their internal audit jobs showed that on average each had spent 3.25 years in internal audit.[69] Excluding those who had retired or died in post (these had stayed in internal audit on average for 9½ years) the average stay in internal audit was under 3 years. This data relates to the stay in audit *of those who had recently left internal audit* but does not consider the service periods of those who were still in internal audit. Another survey found that 64% stayed for less than 3 years,[70] and one leading public authority has recently experienced a 50% turnover within a year.[71] High turnover has been explained as acceptance of movement so that trainees gain experience, movement to gain promotion, a view that people should not be in audit too long, and a view that auditing provides a useful training ground but has limitations as a career. The main personnel policy has been to use internal audit as a career development stage leading to management and supervisory positions.[72]

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[63] Chambers 1978,d.

[64] Hengt, *op cit*, pp. 48, 49, 56–59.

[65] IIA, 1976,a, p. 28.

[66] The Chartered Institute of Public Finance and Accountancy, confidential report reviewed in *Accountancy Age*, 29 July 1977, p. 7.

[67] IIA 1976,b.

[68] IIA, 1976,a.

[69] Chambers, 1977, p. 23 *et seq.*

Internal auditing is in a dilemma; the extension of internal auditing into the review of operational efficiency and effectiveness calls for more audit use of those with *up-to-date* specialist knowledge. On the other hand the approach and techniques of internal auditing cannot be acquired overnight. *If effective internal audit departments can be staffed by recent arrivals then the case for professional status for internal auditing can never be satisfactorily made out.* Frequently chief internal auditors are not senior enough to make internal auditing an attractive career. Career internal auditors in the past have often been forced into an itinerant mode, moving like salesmen from one company to another to improve themselves. Internal auditing needs up-to-date specialists in various operational areas but this must be complemented by a proportion of experienced internal auditors. There is a need to develop the career aspect of internal auditing.

Status

Audit managers report greater acceptance by management of audit work and better responses to it. This has been put down to more capable audit personnel, and to the service approach whereby the auditor concentrates upon being constructive rather than critical. This improvement in the level of recognition over the previous five years was reported in both 1968 and 1975.[73]

Audit committees are also enhancing internal audit status. In the US, by 1975, 89% of the *Fortune* top 500 industrials had audit committees,[74] and New York Stock Exchange regulation now makes this mandatory; also in 1975, 77% of internal audit managers met regularly with the audit committee.[75] Although audit committees are not mandatory in the UK and attempts at legislation have been unsuccessful, they are being established. Provisional analysis of a current UK survey by the author indicates that there are not more than three dozen audit committees in the top 300 UK companies. Recent proposals for mandatory internal auditing, reporting to a supervisory board, are also pertinent.[76] As audit committees or even supervisory boards develop in the UK the status of internal audit can be expected to be enhanced.

There is a growing relationship between internal and external audit. In 1973, 92% of internal auditors in Germany described themselves as 'in constant touch' with the external auditor whereas only 65% so described themselves in 1963.[77] External audit now takes a more active role in developing the internal audit programme. In 1975, 34% of internal audit departments in the world survey judged the external auditor's role to be active in this regard, as against 21% in 1968.[78] This interest by external auditors takes the form of suggesting audit areas to be included within the internal audit programme and by coordinating the programmes of both auditors. Mainly by means of the external auditor's use of internal audit working papers, in 1975 75% of internal auditors judged that, in effect, a joint programme of work existed (43% in 1968). So, coordination exists in the majority of cases *where this implies simply that the external auditor adapts his work in the light of what the internal auditor is doing.* Coordination is less common (34% in 1975), though increasing, where this implies that the external auditor *participates in the determination of what the internal auditor shall audit.*

Internal auditors report changes in the external auditor's audit programme as a consequence of internal audit activity.[79] They report a reduction in time and scope of external audit due principally to a greater use of internally generated reports and working papers which were formerly prepared by the external auditor.

With close cooperation between internal and external auditors, there is discussion as to which parts of the external audit could be tackled by internal audit, and external auditors have found ways of releasing more of their work to internal auditors. It is noteworthy that this has been happening when internal audit emphasis has also been adapting to embrace operational audit areas outside accounting and finance which are not of primary significance in the statutory audit. Internal auditors are anxious not to undertake for the statutory auditor tasks they would not do for themselves lest, in so doing, they fail to meet their own objectives. Nevertheless, there is common ground between internal and external audit.

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[70] IIA, 1976,b, p. 6.

[71] Hogan, *op cit.*

[72] IIA, 1976,b, p. 7.

[73] IIA 1976,a, p. 58.

[74] Mautz, R. K. and F. L. Neumann, *Corporate Audit Committees: Policies and Practice*, (Ernst & Ernst, 1977.)

[75] IIA, 1976,a, p. 22.

[76] Briston and Perks, *op cit.*

[77] Hengt, *op cit*, p. 53.

[78] IIA, 1976,a, pp. 17–18.

[79] *Ibid*, p. 16.

Meanwhile, external auditors are under fire and internal audit's image has been burnished in the process. It has been suggested that, if the internal audit system is satisfactory, the company is paying a substantial sum to ascertain twice that its accounts are in order, and that all listed companies, or all public companies, should maintain an internal audit team appointed by, and reporting to, a supervisory board. In this way the internal auditor would be given a degree of independence which in theory would be as great as that of the external auditor, and his independence could be strengthened by granting protection against dismissal which might take the form of a right to appeal to a companies commission. Considerable savings should result from the combination of internal and external audit within a truly independent audit department.[80]

Extended reliance by external audit on internal audit has reduced external audit fees. It is questionable whether it reduces the total cost of the audit.[81] There is an interesting case on record where internal audit substitution reduced external audit work by 23%; the level of substitution achieved was substantially below that theoretically possible because of the involvement of internal audit in the preparation of the accounts and also because of choices made by the client and the firm of external auditors.[82] Of course, this audit substitution was achieved with no sharing of responsibility for the audit opinion.

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[80] Briston and Perks, *op cit*, p. 48.
[81] Crabtree, *op cit*, p. 118.
[82] *Ibid.*

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Forthcoming Conferences

The 1981 Conference of the Association of the University Teachers of Accounting will be held at the University of Dundee.

The next Conference of the European Accounting Association will be held at IESE, Barcelona on April 13–15, 1981.

'Significant Influence' Through Board Representation: Some Conflicts and Controversies

G. Gniewosz*

Accounting for associated companies has been the subject of pronouncements/exposure drafts of the accounting professions of most English speaking countries.[1] In all of these pronouncements/exposure drafts the 'equity method' of accounting for associated companies is justified mainly on the basis of the investor's 'significant influence over the operating and financial policies of the investee'.

The purpose of this paper is to demonstrate clearly that the 'significant influence' criterion can be stated either in terms of the *ability* to influence or in terms of the *actual* execution of this ability and that, internationally, both points of view have been subscribed to in professional pronouncements and exposure drafts. In other words, internationally there is not a unified approach in the requirement of significant influence. It is a further purpose of this paper to examine critically the validity of the presumption stated in some pronouncements and exposure drafts that an investor's representation on the investee's board is synonymous with *actual* participation in policy decision making and thus actual execution of 'significant influence'.

It is generally recognised that significant influence may be exerted in many different ways other than through a representation on the investee's board of directors, which in most cases is the result of, and is in proportion to, the investor's ownership of the investee's shares. Significant influence may be exerted, inter alia, through an interchange of managerial personnel, technical dependency, a major supplier/customer relationship, or through the investee's technological dependency on the investor. The focus in this article will, however, only be on a significant influence through a representation on the investee's board of directors.

A further problem which is beyond the scope of this paper and is only touched on in passing, needs some detailed investigation. In advocating 'equity accounting', the profession has indirectly presumed certain relationships between the nominee director and the interests of the investor to which the nominee director owes his appointment on the one hand and the interests of the company on whose board he sits on the other hand. Only a clarification of this complex legal relationship will throw some light on the true meaning of the term significant influence through board representation.

It is not the intention to discuss in this paper the meaning of the concept of an 'economic entity', neither is it the intention to discuss the suitability of an 'associated company' as an element of the economic entity, or even an enlarged and more loosely defined economic entity. It is also not the intention to discuss the validity of the 'participation in dividend policy decisions' requirement once the associated company is being considered an element of the economic entity, or enlarged economic entity.

In the accounting literature the concept of 'control' has conventionally been used in the context of a holding company/subsidiary relationship, i.e. control has conventionally been used in the legal meaning of a more than 50% ownership, or voting right. The departure from the concept of control and the adoption of the concept of significant influence in the justification of 'equity accounting' does bring one inevitably into the area of organisational behaviour, despite the fact that the profession has set some arbitrary guidelines in terms

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*The author acknowledges the useful comments of an anonymous referee on an earlier draft of this article.

[1] The pronouncements and exposure drafts of the professional accountancy bodies of the following countries were examined: UK, USA, Canada, Australia, New Zealand, and the pronouncement of the IASC.

of legal ownership. An interpretation of the concept of significant influence merely in terms of legal ownership and/or voting rights is arbitrary and rather meaningless as a justification for the equity method.

The adoption of the concept of significant influence as an accounting criterion is a departure from the 'classical' theories of organisation which tended to consider that influence was exerted through the authority of position while the personal characteristics of the occupant of the position were disregarded. However, as pointed out in several studies,[2] influence is exerted through much more complex systems than merely legal ownership or power. As defined in The International Webster Dictonary (1973) 'influence' represents:

> ...; power of affecting others through the use of authority, money, or social position; power of producing effects by invisible or intangible means; a person or thing that exerts force by intangible means.

Conflicting 'significant influence' requirements

The criterion of *ability* to exercise significant influence is common in all the pronouncements and exposure drafts examined, and is defined with varying degrees of firmness as 20% of equity voting rights. In other words, *potential* exercise of significant influence is arbitrarily defined in these pronouncements and exposure drafts in terms of voting rights, and thus legal ownership. The reasoning for this treatment is expressed by the AICPA in APB18 (restated in AC Section 5131) para 17, as follows:

> ...In order to achieve a reasonable degree of uniformity in application, the Board concludes that an investment (direct or indirect) of 20% or more of the voting stock of an investee should lead to a presumption that in the absence of evidence to the contrary an investor has the ability to exercise significant influence over an investee. Conversely, an investment of less than 20% of the voting stock of an investee should lead to a presumption that an investor does not have the ability to exercise significant influence unless such ability can be demonstrated...

In other words, the burden of proof is only imposed in cases of a departure from the 20% voting right guideline.

In the case of the United Kingdom SSAP1, the question of *ability* to exercise a significant influence is treated differently. It is stated that:

> ...the investing group or company's interest in the associated company is for the long term and is substantial (i.e. not less than 20% of the equity voting rights), and, having regard to the disposition of the other shareholdings, the investing group or company is in a position to exercise a significant influence over the associated company...[3]

Twenty per cent of equity voting rights is in this case used to define the term 'substantial' while no direct definition of the phrase 'is in a position to exercise a significant influence' is provided. Furthermore, no reference is made in SSAP1 as to any necessary proof required that there is an ability to influence significantly.

In addition to the common requirement as to the *ability* to influence significantly, in some of these pronouncements and exposure drafts *ability* to influence, or potential influence, alone is stated as not sufficient to define an investee company as an associated company. For example, it is a requirement of SSAP1 that the investor *actually* participates 'in commercial and financial policy decisions of the associated company, including the distribution of profits'.[4] In other words, it is stated that *ability* to influence significantly is not sufficient but that this ability must actually be carried out, i.e. that the investor *actually* participates in the policy decisions of the investee.

As a guideline it is stated that *actual* participation generally takes place through a representation on the board, i.e. a mere representation on the board is considered to be *actual* participation. Assuming that board representation is proportional to equity voting rights, *actual* participation is therefore generally to be interpreted as at least 20% occupation of the composition of the board.

In general it can be stated that in both cases, i.e. APB18 and SSAP1,[5] similar companies would be defined as associated companies, i.e. 20% ownership/voting rights and board representation. The disturbing fact is, however, that in one case the requirement is in terms of *ability* to influence significantly, i.e. potential to do so, while in the other case there is an additional requirement in terms of *actual* participation, i.e. the actual execution of the ability. This contradiction arises from the fact that both, i.e. *potential* as well as *actual* influence, are defined in basically the same terms, i.e. ownership of equity voting rights and thus representation on the board.

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[2] For example, Cyert R. M., and March J. G., *A Behavioural Theory of the Firm* (Englewood Cliffs, NJ, Prentice Hall, 1963).

[3] SSAP1, para 6(b). It must be realised that an associated company is also defined in terms of a joint venture/consortium and the special relationships which exist in such an organisation.

[4] SSAP1, para 6. SSAP1 is used to illustrate the point but is by no means alone in this respect.

[5] The other pronouncements and exposure drafts examined are similar to either APB18 or SSAP1 in this respect.

The requirement as to *actual* participation in policy decision making, including dividend policy decisions, which is to be presumed to take place through a representation on the board of the investee company, raises two important points:

(a) that the board of directors is actively engaged in policy decision making, including dividend policy; and

(b) that policy decisions, including dividend policy decisions, of an investee company would be different with a nominee representation on the board from what they would be without the presence of such an investor nominee on the board.

The verity of both of these two points is critical to the justification of the equity method in accounting for associated companies and needs closer examination.

The function of the board of directors—theory versus practice[6]

In this section the functions of the board and its members, as stated by law and in the literature, are shortly outlined before well known studies of actual board behaviour are examined to establish the validity of the presumption made in the professional pronouncements and exposure drafts that a board representation is synonymous with *actual* participation in policy decision making and thus actual exertion of significant influence.

The powers and duties of company directors under English law are laid down in the Companies Acts of individual Commonwealth countries. For example the British Companies Act 1948, Article 80, Schedule 1, summarises the powers and duties of directors as follows:

> The business of the company shall be managed by the directors, who may pay all expenses incurred in promoting and registering the company, and may exercise all such powers of the company as are not, by the Act or by these regulations, required to be exercised by the company in general meeting,...

In respect of dividend policy, one of the aspects of policy decisions especially mentioned in some pronouncements and exposure drafts, the powers of the board are stated in Article 114, Schedule 1 as:

> The company in general meeting may declare dividends, but no dividend shall exceed the amount recommended by the directors.

The implication of this statement is that any recommendation of dividends is basically a function of directors. Shareholders may either accept or reduce the dividends recommended by directors. On no account can shareholders increase the dividends recommended by directors.

Authors of textbooks on the subject generally reiterate these overriding principles, often expanding on the basis of case law. For example Brown and Grogan expand on the authority and powers of directors as follows:

> Generally speaking, the authority and powers of directors are of the widest description. As managers of the company's business they have to enter into contracts, invest funds, appoint and dismiss servants, make calls, issue debentures, allot shares, pass transfers, decide what dividends shall be declared, and so on... Directors are usually required to exercise their powers at a duly convened board meeting, but in most cases the articles either confer powers upon individual directors or provide for a power of the board to delegate some or all of its powers and such powers may be exercised without meeting.[7]

The functions of directors in the USA, as stated in a 1967 joint report by the National Industrial Conference Board and the American Society of Corporate Secretaries, appear to be similar to the stated functions of directors under English law. The following seven areas of responsibility are listed:

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[6] The arguments advanced in this paper apply mainly to associated companies other than joint ventures or consortia. It can well be argued that the conclusions drawn in this paper are only of marginal validity in the case of a joint venture/consortium, due to the special relationship that exists between the partners of such an organization.

[7] Brown S. R. and others, *Company Directors* (Sydney, The Law Book Company Limited 3rd ed. 1974) p. 134.

> 1. To establish the basic objectives and broad policies of the corporation.
> 2. To elect the corporate officers, advise them, approve their actions, and audit their performance.
> 3. To safeguard, and to approve change in, the corporate assets (issuance of securities, pledge of asset for loans, declaration of dividends, and conveyance of property).
> 4. To approve important financial decisions and actions (such as budgets, capital appropriation, officers' compensation, and financial audits), and to see that proper annual and interim reports are given to stockholders.
> 5. To delegate special powers to others to sign contracts, open bank accounts, sign cheques, issue stock, make loans and perform such other activities as may require board approval.
> 6. To maintain, revise, and enforce the corporate charter and by-law.
> 7. To assure maintenance of a sound board through regular elections and filling of interim vacancies.[8]

These theoretical statements, legal or otherwise, of the powers and duties of directors, seem to have been taken as authority to use the term significant influence, through board representation, as a justification for the equity method as stated earlier. It is implied in some of the pronouncements and exposure drafts examined, e.g. SSAP1, that a representation on an investee company's board is synonymous with *actual* participation in the policy decision making process of that investee. The real question is, however, not so much a question of what directors on the board of the investee company should do, but what they actually do. In other words, the real problem is directors' actual behaviour rather than believed or even desired behaviour since only a Standard which covers an actual situation, and not a believed or desired situation, will be an enhancement of the 'true and fair view'.

Several studies carried out in the United States[9] indicate that directors do not actually act as described in textbooks.[10]

R. A. Gordon concludes:

> There must be some single authority (not necessarily a single individual) to establish objectives, to interpret subordinates' decisions in the light of these objectives, to reconcile internal conflicts, and generally to accept final responsibility for maintaining a smoothly running organization. This function, despite the textbook on management, is performed much more often by the chief executive than by the board of directors as a whole. The board or one of its committees may assume the co-ordinating role, but this is not typical.[11]

Gordon also finds that the board's approval function is generally more important than its initiating activities. But at the same time he maintains that 'even with respect to approval, many boards in these large companies are almost completely passive.[12]

Myles L. Mace makes a similar observation in respect of the actual functions of directors. He concludes that:

> We have examined... three traditional, generally accepted, and important definitions of board roles: (1) establishing basic objectives, corporate strategies, and broad policies; (2) asking discerning questions; and (3) selecting the president. It was determined that in most situations boards of directors do not perform these three functions; these roles are fulfilled by the president.[13]

In some of the pronouncements and exposure drafts examined, e.g. SSAP1, actual participation in dividend policy is singled out as one of the requirements for the adoption of the equity method. This is, however, not to say that even if there is actual participation in dividend policy that the investee company could necessarily be classified as an associated company. Dividend policy decisions are only one aspect of the whole spectrum of commercial and financial policy decisions and therefore actual participation in dividend policy decisions can by no means be taken as actual participation in commercial and financial policy decision making in general. It is interesting to note that with respect to actual participation in dividend policy decisions by directors, Gordon made the following observation:

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[8] Mace, Myles L., *Directors: Myth and Reality* (Boston, Division of Research, Graduate School of Business Administration, Harvard University, 1971) p. 7.

[9] Two people who are extensively involved in research into the actual functions of directors and the board of directors in large companies are R. A. Gordon and Myles L. Mace.

[10] Similar statements are made in P. F. Drucker, *Management* (London, William Heinemann, 1974) pp. 627–628 and R. Nader and others, *Taming the giant corporation* (New York, W. W. Norton & Company, 1976) pp. 95–102.

[11] Gordon R. A., *Business leadership in the large corporation* (Berkeley and Los Angeles, University of California Press, 1966) p. 106.

[12] *Ibid.* p. 131.

[13] Mace, Myles L., *op. cit.* p. 72.

> The chief executive's recommendations are nominally subject to approval by the board of directors but in practice boards in these large companies do not usually exercise the active control over dividend policy with which the textbooks credit them. The board itself seldom recommends a dividend but rather acts on recommendations brought to it by the chief executive or by a standing committee of the board (in whose deliberations the chief executive ordinarily plays an important role).[14]

On the basis of empirical studies it can be concluded that a presumption that board representation is usually synonymous with actual participation is an oversimplification and must be considered to be not much more than mere perpetuation of 'textbook theory'. Acceptance of board representation as sufficient evidence of 'participation in policy decisions', without regard to the actual location of power in the investee company, has been considered as an unprofessional approach.[15]

The problem which arises in making the terms 'significant influence' and 'participation' operational, on a basis other than pure ownership percentage and board representation, are illustrated in the 1976 Annual Report of a major company listed on the New Zealand Stock Exchange.[16] In the 'Notes to Accounts' the following statement is made:

> Although these shares represent 22% of the capital of... Limited, the directors have decided that the company *can not significantly influence* the policies of... Limited, and therefore do not consider that the investment should be dealt with on an equity accounting basis in accordance with the NZ Society of Accountants statement of standard accounting practice. (Emphasis added)

The auditors, a leading firm of auditors in New Zealand, objected to this practice and qualified their report as follows:

> For the reasons stated in the notes on page 13, the group's share of the results of... Limited has not been included in the Consolidated Statement of Profit. *Because* two Directors of... Limited are also directors of... Ltd, in our opinion... Limited *participates* in the financial and operating policy decisions of that company, *and is in a position to exercise significant influence* over... Limited. Accordingly, *in terms of the Statement of Standard Accounting Practice* 'Accounting, for Associated Companies (Equity Accounting)' the group's share of the results of... Limited should, in our opinion, be incorporated in the Consolidated Statement of Profit. (Emphases added)

It is interesting to note that the auditors explicitly argue the existence of *actual* participation, as well as ability to participate, solely on the grounds of board representation. On the other hand the company maintains that two directors, including the chairman of the board, out of a board of seven, does not even constitute an *ability* to influence. Both of these arguments are suspect.

As stated earlier, the problem of *ability* to influence significantly is not merely a question of authority arising from the positions occupied but is also largely dependent on the personal characteristics of the individuals occupying those positions. The situation has to be seen in the context of the composition of the investee's board. The problem of establishing whether or not such an ability exists is by no means a simple task but requires a knowledge of behavioural science as well as a familiarity with the particular situation.

The auditor's decision as to whether *actual* participation is present cannot be made solely on the basis of board membership. One of the auditor's main problems is to determine whether there is *actual* participation. Information about *actual* participation may be obtained by the auditor from sources such as minutes of board meetings, discussions with investee board members and other top level managers, and/or observation of meetings. Each situation will be by no means clear cut but will be open to differing opinions. Professional judgment is an important function of the accountant and the auditor and cannot be substituted by adherence to simple and superficial guidelines.

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[14] Gordon R. A., *op. cit.* p. 94.

[15] For example, McCandless H. E., 'Applying the effective control criterion', *CA Magazine*, October 1975, pp. 37–44.

[16] The requirement of the New Zealand SSAP2 in respect to participation 'usually through representation on the board' is identical to that of SSAP1, i.e. New Zealand financial reporting practice can be used to illustrate this point.

Duties of the nominee director on the board of the investee company

Based on evidence of the American situation, as outlined above, there is a discrepancy between the function of the board of directors as stated in the literature and the actual behaviour of the board. But even assuming that a representation on the board means that the investor company does actually participate in policy decision making, the additional problem which needs to be considered is the extent to which the nominee director on the board of the investee company is legally permitted to look after the special interest of the investor company rather than the interest of the investee company as a whole. Although it is beyond the scope of this paper to examine critically the legal implications of the duties of the nominee director on the investee's board, it is interesting to note the following statement made in the second Australian exposure draft (September 1973):

> To the extent that the profits of an investee brought into account by the investor under the equity method are not covered by dividends from the investee, they represent, from the viewpoint of the investor, 'unrealised profits'. In this respect the equity method departs from the 'realisation' concept as traditionally employed in the determination of periodic results. This recognition of unrealised profits, as well as of unrealised losses is supported on the grounds that, in investment situations for which the equity method is appropriate, the investor is in a position to control, or at least influence significantly the final disposal of the investee's profits.[17]

The inference seems to be that the investee company's dividend payout ratio would, or at least could, depend to some extent on whether or not the investor company is represented on the board. In other words, the nominee director will 'influence' dividend policy decisions in the interest of the investor company.

As pointed out by Afterman[18] the question of the duties of the nominee director is extremely complex. It is an area which requires some urgent attention by the profession. The results of such an analysis would be of vital importance to the relevance of the equity method.

Summary

The justification for the equity method of accounting for investments in associated companies is generally stated to be that the investor has the *ability* to exercise a significant influence over the investee company. In some pronouncements and exposure drafts, *actual* participation in policy decision making is stated as an additional requirement, i.e. a distinction is made between *potential* and *actual* influence. It is however disturbing to find that both terms, i.e. potential and actual influence, are defined in the same way, i.e. a representation on the investee's board.

If the findings of actual director behaviour in the USA are indicative of actual director behaviour in general, and there appears to be no reason why this should not be so, the implication in some pronouncements and exposure drafts that board representation represents *actual* participation in policy decision making is an oversimplification and merely a perpetuation of textbook theory.

The question of the duties of the nominee director on the investee's board requires analytical examination. The outcome of this examination, largely dependent on legal principles, will be crucial to the validity of the equity method.

Accounting standards such as Statements of Standard Accounting Practice are issued by professional accounting bodies to provide a more definitive approach to the concept of a true and fair view. For this reason, Standards must cover actual situations and not believed, or desired, situations.

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[17] Australian Society of Accountants, The Institute of Chartered Accountants in Australia. Exposure Draft, 'Proposed statement of accounting standards: the use of the equity method in accounting for investments in subsidiaries and associated companies'. 7 September 1973, paragraph 17.

[18] Afterman, A. B., *Company Directors and Controllers: their Duties to the Company and the Shareholders* (Melbourne, The Law Book Company, 1970) p. 59.

Note—The recent issue of ED 25, 'Accounting for the results of associated companies' does not materially affect the arguments advanced in this article.

The Valuation of Liabilities[1]

Deepak Kulkarni

Introduction

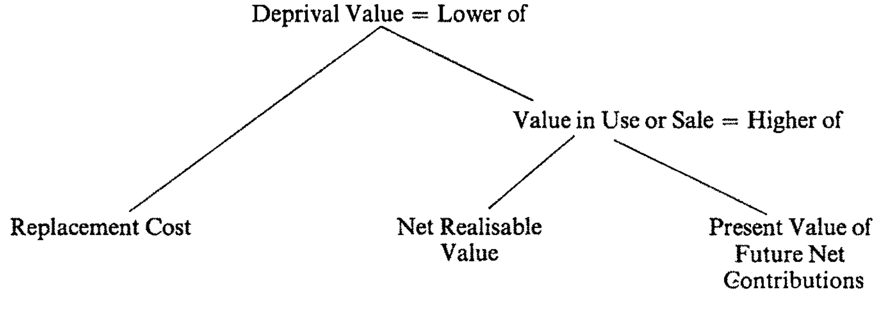
The concept of 'deprival value' for valuing assets is now firmly established in accounting theory. However, its application to liabilities has not been fully explored in the literature, although the need to do so is generally recognised. For instance, the Sandilands Report[2] stated that 'in principle, liabilities should be shown in a company's balance sheet at their value to the business. However, the translation of this principle into practice would pose difficulties....' ED 18[3] noted that liabilities 'call for extended study and this, together with the view that simplicity of treatment is important, has led to the conclusion that on practical grounds no change should be made, for the time being at least, in the existing practice of showing liabilities.'

The aim of this article is to propose a practical valuation rule for liabilities within the conceptual framework[4] of deprival value. We begin by briefly examining deprival value (as applied to assets)[5] and then consider its sister—Professor Baxter's relief value (as applied to liabilities).[6] Thereafter, the effect of capital rationing and management policy on a debt's burden is dealt with. Lastly, we propose a working valuation rule and in doing so conclude that while for assets replacement cost is, in most instances, a sufficient proxy for deprival value, in the case of liabilities its counterpart, 'replacement loan', does not yield similarly useful results.

Deprival value and relief value

The deprival value of an asset may be defined as the minimum amount that would just compensate the owner of the asset being valued in the event of its hypothetical loss. This amount is usually the asset's replacement cost unless this is higher than both its net realisable value and the present value of its future net contributions; in the latter

Figure 1
The Deprival Value Tree


Deprival Value = Lower of
Value in Use or Sale = Higher of
Replacement Cost
Net Realisable Value
Present Value of Future Net Contributions

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[1] I am heavily indebted to Professors Richard Macve, Harold Edey and William Baxter for criticising previous drafts of my MSc dissertation (written at the London School of Economics in 1977) on which this article is based.

[2] *Report of the Inflation Accounting Committee*, Cmnd. 6225 (London: HMSO, 1975), para. 531.

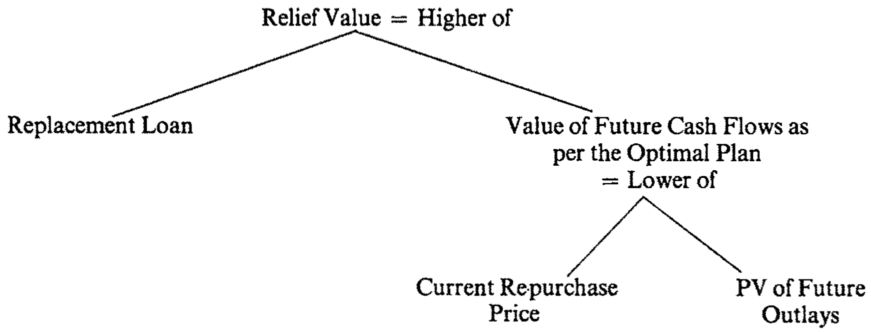
[3] Accounting Standards Committee, *Exposure Draft 18*, 30 November 1976, para. 242.

[4] The deprival value approach considered in this article is one which values each asset or liability individually, although I acknowledge this method to be conceptually inferior to one which values a firm in its entirety. This is so because valuation rules do not bow to the mathematical postulate that the sum of the parts equals the whole. To illustrate, a man's heart when viewed separately from the body is possibly only of anatomical interest. But when it is viewed as part of a living being then it is probably worth life itself. This point is discussed further in H. C. Edey 'Deprival Value and Financial Accounting', in H. C. Edey and B. S. Yamey (eds.), *Debits, Credits, Finance and Profits* (London: Sweet and Maxwell, 1974) p. 83.

[5] As far as I know, the concept of deprival value was first introduced by Professor J. C. Bonbright in his excellent classic *The Valuation of Property* (New York: McGraw-Hill, 1937).

[6] W. T. Baxter, *Accounting Values and Inflation* (London: McGraw-Hill, 1975) pp. 138–140.

Figure 2
Professor Baxter's Relief Value Tree



instance, the asset's deprival value is its net realisable value or its present value, whichever is the higher. Figure 1 illustrates this definition. By analogy, Figure 2 illustrates the less well known concept of the value to the owner of a liability. Perhaps the term 'deprival value' is inept in the context of liabilities. Professor Baxter's 'relief value' seems to be a fitting alternative. Thus we talk of a firm being costlessly relieved of the liability being valued and then try to evaluate the benefit of relief. Let us briefly examine each branch of the relief value tree in turn.

Replacement Loan

There are several alternatives open to a firm on relief. For instance, the firm may so like its particular method of financing that it may go to the capital market and seek additional finance on the strength of an unchanged flow of future payments. The sum it could raise on the market, 'replacement loan' (RL), then emerges as the relief value since this is the resultant improvement in its cash prospects.

Current Repurchase Price

On the other hand, a relieved firm may not wish to 'replace' its liability. It may already be concerned about the level of its gearing and of the 'fixed' charges on its income. Tax advantages may persuade it to switch to an alternative method of financing. For one of several reasons let us say that the optimal course of action open to the firm even prior to relief was the buying back of its liability. This sum could either be the current repurchase price (CRP) or a contracted or negotiated sum. Relief saves the firm this outlay. This value would then be the appropriate value.

Present Value

A third possibility exists. Our firm's credit may have sunk because of a change in the market's assessment of its risk. Or because of a rise in the general structure of interest rates, our firm is only able to raise a tiny replacement loan on the strength of its future payments. Assuming that other factors remain unchanged, our firm may not be willing to raise as little a sum as RL on the strength of its future payments or pay as high a figure as CRP for the liability's immediate redemption. Under such circumstances, the firm's optimal plan would indicate inertia with regard to its liability. Relief would, in this case, save the firm from having to pay out the present value (PV) of future outflows.

Let us digress for a moment and briefly consider the calculation of PV. It is obtained by discounting cash flows at a suitable rate of time preference for money. If a firm has unrestricted access to the capital market, the lower of the interest rate it suffers on borrowing and the risk-adjusted[7] return afforded by its marginal investment[8] seems to be the appropriate discount rate.

We shall also assume that the risk adjusted marginal return will, in the long run, exceed the market rate of interest.[9] This is because if the marginal return is persistently lower, a firm would in the long run be forced out of business, or would have to curtail the scale of its operations significantly. Thus when a firm is free from capital rationing, it should always use the market rate of interest in determining PV.

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[7] By risk I mean not merely the risk of default, but also the risk arising from a possible loss of purchasing power in times of inflation. Also included is the risk arising from lending long at current rates of interest. The lender faces the possibility of interest rates rising, sometime after his investment, causing him to lose the opportunity of lending at the higher rate. See F. W. Paish, *Business Finance* (London: Pitman 4th ed) chap. 2.

[8] As Hirshleifer points out—see 'On the Theory of Optimal Investment Decision' *Journal of Political Economy*, August, 1958, pp. 329–72—this rate need not necessarily equal the internal rate of return of the marginal project, as the IRR is an average rather than a marginal measure. However, the IRR is usually the best available approximation to the marginal return.

[9] M. Bromwich appears to share this view on p. 207 in his *Economics of Capital Budgeting* (Harmondsworth: Penguin, 1976).

But sometimes, in a situation of capital rationing, a firm does not have access to the capital market. This may either result from a policy decision (non-absolute rationing) or could be enforced because the market is unwilling to advance any further sums to it (absolute rationing). If capital rationing applies, for whatever reason, the risk-adjusted marginal return would seem to be the appropriate rate.

The above paragraphs seem to suggest that the availability of finance may have a significant effect on the impact of a debt's burden. Therefore, we consider the valuation of liabilities firstly in the absence of capital rationing and thereafter in a situation of capital rationing.

Relief value in the absence of capital rationing

Perfectly Competitive Markets

Consider replacement loan (RL) and current repurchase price (CRP). In a perfect market, which by implication excludes transaction costs and assumes Lintner's 'fully idealized uncertainty',[10] one would expect RL to equal CRP (unless the CRP is contractually fixed; this is treated as a market imperfection and is considered in the next section).

Suppliers of capital would discount future interest and redemption payments at the market rate. This rate ought to tie in exactly with the price at which the firm's securities are traded on the market. The firm's rate of discount used in determining present value (PV) ought also to coincide with the market rate as it is based directly on it (we have previously assumed the risk-adjusted marginal return to be higher than the market rate of interest). Under perfectly competitive conditions, then, we would expect all three branches in our relief value tree to assume identical values.

Determining relief value in such a situation becomes childishly simple: one has merely to pick any one of three identical values.

Imperfectly Competitive Markets

A real world situation is less than perfectly competitive. Let us briefly examine the cause of such imperfections. Later paragraphs will discuss their effect on the relief values of debt.

In every case, transaction costs would cause all three values (RL, CRP and PV) to differ. However, for the purpose of theoretical exposition we will assume these to be negligible as they unduly complicate a general analysis. So, in the case of bonds and similar liabilities, it is difficult to think of any convincing reasons for RL and PV differing. Suppliers of capital determine RL with reference to the market rate of interest. PV, as previously defined, is the future stream of payments required to be paid under the debt's obligation, also discounted at the market rate of interest. But, as noted earlier, RL and PV may differ from CRP where the latter is fixed by contract. Imperfections seem to upset the relief value tree and a different valuation rule to that suggested by Professor Baxter appears to emerge.

This contention can best be demonstrated by a series of examples. For simplicity, all risk considerations which cause the value of debt to fluctuate for reasons unconnected with changes in the general structure of interest rates are ignored at this stage. These are briefly considered later. The data for the example are set out in Table 1.

Table 1

At date 19x0, a firm is able to raise £125 on the market through an irredeemable (except at borrower's option) debenture issue. The terms of issue require interest payments of £10 p.a. (hence the market rate of interest is 8%). The firm can, if it wishes, redeem its debt for £125. The firm proposes to purchase an asset for £125 with the funds raised and, for simplicity, we shall assume that there is no equity.

The relief value tree and the balance sheet of the company at 19x0, are shown in Figure 3.

The relief value of the liability is its RL = CRP = PV = £125. RL must necessarily be close to PV if we are dealing with a near perfect market. CRP must be £125 or higher, at the moment of starting, but not lower (otherwise the firm would redeem its debt an instant after it had raised the funds). For simplicity we have assumed

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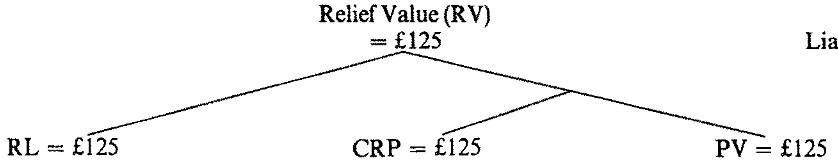
[10] 'Fully idealized uncertainty' describes the situation where not only the quantity and quality of information disseminated to market participants is the same, but also where market participants formulate identical subjective probability distributions of the likely outcome, on the basis of that information. See Lintner 'Dividends, Earnings, Leverage, Stock Prices and the Supply of Capital to Corporations', *Review of Economics and Statistics*, August 1962, pp. 254–260.

Figure 3



Balance Sheet

Liability	£125	Asset	£125

a CRP of £125; this assumption does not in any way invalidate what follows.

In the year 19x1, market rates of interest rise to 10% and RL and PV fall in sympathy to £100 each. Figure 4 sets out the new position.

The relief value of the liability is its RL = PV = £100. The balance sheet reveals a gain of £25. This gain can best be explained as an 'opportunity benefit'. The firm's directors were astute enough to borrow long when interest rates were low (8%) and have served their shareholders well. Whether, or to what extent, this gain is realised remains an open question, depending, not least, on one's definition of realisation.

Opposition might be encountered from some quarters as to the propriety of the gain of £25 on the grounds that it is not, or may not 'prudently' be regarded as distributable.

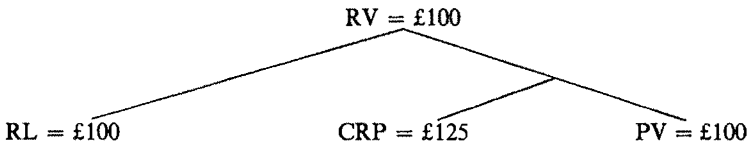
Critics might be reminded that distributability should not be confused with measurement. It can be argued that whether or not *any* gain is distributable should be determined by reference to the risk preferences of the firm (or more accurately, its owners) and by peering into the future to gauge the probability of the cat jumping the other way—in this context a loss arising from a fall in interest rates. However, the probability of a future loss is hardly a good reason for concealing the existence of current gains provided their nature and possible reversibility is made clear. Such gains and losses should, one may argue, be shown unflinchingly.

Continuing from the position in figure 4, in the year 19x2 we will assume that interest rates fall to 5%. RL and PV will therefore increase to £200. The CRP cannot rise above the contractual redemption price of £125 as the firm can always redeem at that price. Figure 5 sets out the relief value tree and the balance sheet of the firm at 19x2.

The tree, as interpreted by Professor Baxter, apparently reveals a relief value of £200, compelling us to disclose a loss of £100. But surely this is unduly pessimistic. The liability cannot assume a burden greater than £125, for this is all that the firm needs to pay to rid itself of all future obligations under the debt.

Of the alternatives open to the firm—keeping the debt or redeeming it—redemption is the cheaper option. Relief saves the firm having to

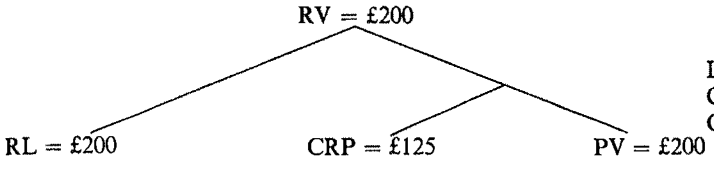
Figure 4



Balance Sheet: 19x1

Liability	£100	Asset	£125
Gain	25		
	£125		£125

Figure 5



Balance Sheet: 19x2

Liability	£200	Asset	£125
Gain b/f	25		
Current loss	(100)		
	£125		£125

pay the redemption price. Therefore, CRP seems to be the appropriate value. Indeed, I would argue that RL is irrelevant, as identical 'replacement' does not seem possible. This is so because the new replacement loan of £200 (carrying the same future payments of interest) would not also have a CRP of £125; for, who would lend you £200 with an option to repay at any time at £125? Alternatively, no one would be prepared to lend you more than £125 when you have the option of repaying at once at £125. Hence we can safely 'chop off' the RL branch of our relief value tree, and apply the usual rules to the remaining branches. Relief value then becomes the lower of CRP and PV.

A comparison with assets may serve to illustrate the issues under consideration. Imagine a firm owning an asset with net realisable value = present value = £125. Assume also that the current market replacement cost of this asset is £125 (such figures are not unrepresentative of the commodity markets). Suppose that at the time of buying the asset the relevant purchase contract included a non-transferable option to buy another (replacement) asset for £100—the price prevalent at the date of the contract. This replacement would not also carry a similar option. Figure 6 sets out the deprival value tree for the first asset.

Here the RC branch would seem to be irrelevant as it is impossible to acquire a further replacement on the same favourably contracted terms. Contrary to the tree, deprival value, in terms of the outlay avoided through the ownership of the existing asset, is £125.

Returning to the discussion on liabilities, our arguments so far suggest that the value to the firm of its debt is £125. The revised balance sheet at 19x2 is shown in Figure 7.

The loss of £25 may be described as an 'opportunity loss' which offsets the earlier opportunity benefit. The full story might be more accurately described if one were to show a loss of £100 (arising from the fall in interest rates) and a gain of £75 (conveying the directors' astuteness in contractually fixing CRP at a low level).

Perhaps we are now in a position to re-define the relief value of a debt in a good market, in the absence of transaction costs and capital rationing and ignoring the spread of buying and selling prices. Its value is denoted by its CRP (market value) which normally equals PV (as here defined).

Where the CRP is contractually fixed in favour of the borrower, relief value is the lower of PV and the contracted CRP.

We shall now proceed directly to a discussion of relief value under capital rationing. Such a discussion is necessary because our PV branch may be different in the absence of recourse to the market.

Relief value under capital rationing

Let us reconsider present value. The general rule established earlier that present value should be calculated by discounting future interest and redemption payments at the lower of the market rate of interest or the risk-adjusted marginal rate

Figure 6

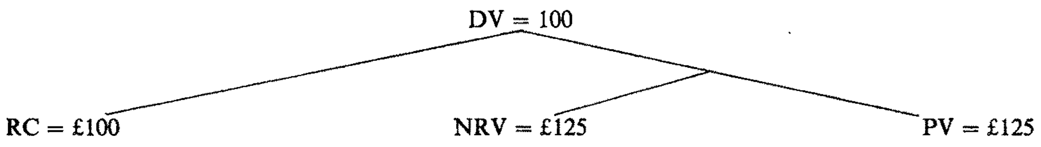
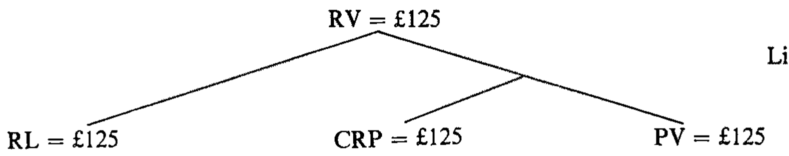


Figure 7

Balance Sheet: 19x2

Liability		£125	Asset	£125
Gain b/f (Figure 4)	25			
Loss (Figure 7 value minus figure 4 value)	(25)	—		
		£125		£125

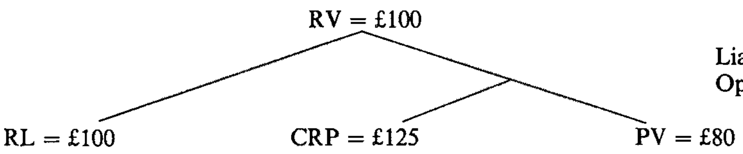
Figure 8



Balance Sheet

Liability	£125	Asset	£125

Figure 9



Balance Sheet: 19x1

Liability	£100	Asset	£125
Opportunity Gain	25		
	£125		£125

of return requires, as discussed earlier, to be modified under capital rationing. Here, the risk-adjusted return afforded by the marginal internal project seems to be the appropriate rate, as the firm has no access to the capital market.

Valuation of debt becomes more difficult under such circumstances. As usual the principal issues are illustrated by a simple example (Table 2).

Table 2

In 19x0, a firm raises a long term loan of £125. The terms of the loan require interest payments of £10 p.a. to be made. For arithmetical simplicity we shall assume the loan to be irredeemable, except at borrower's option (hence the market rate of interest is 8%). The firm can, if it wishes, redeem the loan for £125. The firm proposes to purchase an asset for £125 with the funds raised. Again, in the interest of simplicity, we shall assume that there is no equity.

The relief value tree and the balance sheet of the firm at 19x0, are shown in Figure 8.

The relief value of the liability is its RL = CRP = PV = £125.

In 19x1, the firm faces capital rationing. The interest rate now stands at 10% and the risk-adjusted rate of return of the marginal investment is assumed to be $12\frac{1}{2}\%$.[11] The relief value tree and the balance sheet at 19x1 are shown in Figure 9.

Replacement loan seems to emerge as the liability's relief value. But this valuation implies certain assumptions. It implies that, in the event of hypothetical relief, a firm is able to replace the relieved loan and hence the (negative) value of the debt must be £100 as this is the resultant improvement in its cash prospects.

But surely whether or not a firm is able to raise RL depends on the nature of the capital rationing it faces. Where rationing is in some sense 'absolute', a relieved firm may be unable to raise an RL at all. On the other hand, rationing—whether externally imposed or arising from an internal policy decision—could depend on some suitably defined gearing ratio. In such situations relief would alter this ratio. This should enable a firm to raise an RL in the event of hypothetical relief.

The valuation of £100 implies the latter kind of 'non-absolute' rationing. Under this type of rationing £100 does indeed seem to be the appropriate value as a relieved firm would raise an RL equal to this amount. On the other hand if rationing is absolute, one is again compelled to chop off the RL branch of the relief value tree since the option of raising an RL is lost under such circumstances. The remaining branches now imply a value of £80.

The above arguments seem to suggest that relief value is the lower of PV and CRP except in a situation of non-absolute capital rationing. In the latter situation, Professor Baxter's valuation rule (illustrated in Figure 2) would seem to apply.

---

[11] It is assumed that changes in the risk adjusted marginal return do not affect the valuation of assets. This simplifying assumption, which is not inconsistent with the deprival value concept, enables us to isolate the effect of changing interest rates on the valuation of debt. The charge, that changes in interest rates could affect both asset and liability valuations, may surely be justified under certain circumstances. Perhaps this reinforces the case for valuing the firm as a whole, as yet another weakness in the asset by asset approach has been exposed.

But Professor Baxter concedes that the deprival value approach assumes the availability of plenty of cash. Hence we are perhaps entitled to question whether capital rationing is a circumstance envisaged by normal and routine relief budgets.

Perhaps an example of 'asset rationing' can best illustrate the issues by analogy: 'Suppose a blizzard isolates a factory at balance sheet date. The fuel stock is running low. So long as the snow lasts, the value of fuel should surely be exceedingly high for purposes of decisions of short term usage.'

Indeed its value would fluctuate with the severity of the blizzard: 'But the same high figure in the annual accounts would be unhelpful. The replacement price at times of easy delivery will give a better view of the assets when the accounts are read by normal readers at normal dates.'[12]

Likewise, the value of a liability fluctuates with the degree of rationing. A general valuation rule cannot be expected to deal with the multitude of capital rationing situations that might be faced by individual firms. And as capital rationing is usually short-term, its inclusion in relief budgets does not seem particularly useful.

Under such assumptions it would seem that the valuation rule we established under non-capital rationing is the appropriate general rule.

The effect of changes in risk assessments on the value of debt

I have, up to this point, avoided one problem frequently associated with the valuation of debt—that is management policy and direction. This is considered briefly here. Bad management could affect the value of debt adversely. This depression in the value of debt could produce an 'improvement' in a firm's balance sheet, and result in 'gains' being shown in the income statement. ED 18[13] envisages this: 'The problems of applying a value to the business approach to liabilities include such matters as ... whether rises or falls in the value of liabilities caused by changes in the market interest rate structure should be differentiated from those due to alterations in the market's assessment of the company's earnings expectations and risk, and, if so, how the two effects can be separated...'

Whilst such a separation is undoubtedly problematic (if not impossible), one may argue that in practice the value of debt of a going concern does not fluctuate significantly because of adverse risk assessments. And when such fluctuations do occur, the 'going concern' concept is probably suspect. However, ultimately this contention can only be confirmed or rejected by empirical research.

It is perhaps also not useful to consider, as a general valuation rule, the proposal that a liability be valued at the amount that would be payable in a hypothetical liquidation. Such valuations would seem to imply undue pessimism.[14]

Conclusion

It would seem that the definition of relief value we formed earlier continues to hold. I shall conclude by repeating it. The relief value of a liability in a good market, in the absence of transaction costs and capital rationing, and ignoring the spread of buying and selling prices, is denoted by its current repurchase price (market value) which normally equals present value (as here defined). Where the current repurchase is contractually fixed in favour of the borrower, relief value is the lower of present value and the contracted current repurchase price.

---

[12] W. T. Baxter (1975), p. 132.

[13] Accounting Standards Committee, ED 18, para. 241.

[14] This point is well illustrated by the following example quoted from page 124 of W. T. Baxter (1975): 'Once a valuer is forced to work on artificially gloomy assumptions, such as liquidation... there seems no end to the spiralling catastrophies that he must envisage. I might argue that the most plausible sale price of my piano is what it will fetch as firewood during the next ice-age....'

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The Auditor's Liability: A Myth?

G. D. Pound and John K. Courtis

Introduction

The literature on auditing has over time provided voluminous reference to propositions and summaries of litigation against auditors, and their responsibilities to third parties. However, while case law has generated an increased scope for litigation against auditors for 'careless words'[1] (irrespective of any contractual or fiduciary relationship), there is still uncertainty as to future trends.

While not denying the role of litigation against auditors as a means of assuring competence in the performance of the audit function[2], the liability of the auditor as perceived by the courts is founded upon a misconception. The liability for misleading statements has evolved in tort because of the interpretation given to the role being performed by a professional auditor in society. Further, it is implicit that the level of competence, and the degree of skill and care should be commensurate with the perceived legal role, and be consistent with the current environment. The auditor's liability can be evaluated within this context, and is dependent upon the auditing profession taking a more positive role in the defence and interpretation of its work and output, i.e., the audit report.

Current perceptions

Research to date has provided the auditing profession with two interesting pieces of evidence. Firstly, Beck[3] has shown that the auditing profession is seen, at least by shareholders as one primary interest group, to be producing an output beyond that which the profession would admit to. Beck's study revealed that shareholders saw a 'clean' audit report as indicating, among other things, that management is efficient, the company is financially sound and that there have been no frauds perpetrated by company officials. If the auditing profession passively accepts this role, or is willing to be perceived as fulfilling such a role, the traditional understanding (albeit confused) of their legal liability will stand and most likely be enforced. The role of the auditor as revealed in Beck's study reflects itself in past court cases and the financial press.

For example, Beck's study indicated that shareholders saw a 'clean' audit report as giving an assurance that there have been no frauds perpetrated by company officials. The auditing profession however relegates fraud detection and reporting to an ancillary function. The Australian profession[4] has stated:

> The auditor recognises that errors or irregularities, if sufficiently material, will affect his opinion. He gives consideration to these possibilities by planning and carrying out his audit in such a manner that he has a reasonable expectation of detecting major mis-statements in the accounts. However, his audit, which is directed to the expression of an opinion, cannot be relied upon to disclose all errors or irregularities.
>
> Reliance for the prevention and detection of errors or irregularities should be placed principally upon an adequate accounting system with appropriate internal control.... If an objective of

---

[1] Strictly, 'careless' is the wide general term and 'negligent' is the narrower technical term applicable only where a legal duty to be careful is found to exist. For a comprehensive exposition of professional negligence see K. E. Lindgren, 'Professional Negligence in Words and The Privy Council', *Australian Law Journal*, April 1972, pp. 176–190.

[2] This role has been supported in both the Metcalf and Cohen Reports in the US. See 'Improving the Accountability of Publicly Owned Corporations and Their Auditors—Report of the Subcommittee on Reports, Accounting and Management of the Committee on Governmental Affairs United States Senate', *Journal of Accountancy*, January, 1978, p. 95 and The Commission on Auditors' Responsibilities, *Report, Conclusions, and Recommendations*, AICPA, 1978, pp. 152–155.

[3] G. W. Beck, 'The Role of the Auditor in Modern Society: An Empirical Appraisal', *Accounting and Business Research*, Spring 1973, pp. 117–122.

[4] The Institute of Chartered Accountants in Australia and Australian Society of Accountants, *CS1: Statement of Auditing Standards*, 1977, para. 7.

an audit were the discovery of all errors or irregularities, the auditor would have to extend his work to a point where the cost would outweigh the potential benefit to the client.

The UK profession in Statement on Auditing U1 adopts a similar approach and states '... there is nothing in the Companies Act 1948 which specifically places a duty upon auditors to search for them or to examine the books and accounts with the object of discovering whether there have been defalcations or other irregularities by directors or employees of the company.'[5]

The courts, while accepting this broad principle, tend to reflect more closely the shareholder attitude as revealed by Beck. The Pacific Acceptance Case[6] (Moffit, J.), which now represents the leading modern exposition of the duties of auditors, states:

> ... it is clear that in planning and carrying out his work an auditor must pay due regard to the possibility of error or fraud. Once it is accepted that the auditor's duty requires him to go behind the books and determine the true financial position of the company and so to examine the accord or otherwise of the financial position of the company, the books and the balance sheet, it follows that the possible causes to the contrary, namely, error, fraud or unsound accounting, are the auditor's concern.
>
> There was some debate as to whether any duty to pay due regard to possibility of fraud was a primary duty or merely some incidental duty, but I think it is sufficient to say that the duty referred to exists, as does the consequential duty to warn; and that each is comprised within the duty to audit with due skill and care.

There is further evidence that courts in the future will be placing greater emphasis on society perceptions in negligence claims:

> In the determination of the duty problem there must always be a large element of judicial policy and social expediency, influenced by the present demands of society for the protection of its members....[7]

Other writers[8] are advocating similar development. Therefore, if 'careless words' is interpreted within the wider social auditing function, the auditor, through the format of the current 'opinion', has cause for concern.

The second source of evidence is available through research into the role of the audit report from an investor viewpoint. This research has been conducted in both the UK and New Zealand.

United Kingdom evidence

In December 1974 two UK researchers, Lee and Tweedie, conducted a postal survey of slightly more than 1500 shareholders to determine the extent to which information contained in Annual Reports was used and understood.[9]

In analysing aspects of company financial reports read by 374 respondent shareholders they found that whereas the Chairman's Report was not read at all by only 4.3% of shareholders, at the other end of the scale they found that the Auditor's Report was not read at all by 43.6% of shareholders and only read briefly for interest by another 39.0%. In other words whereas the Chairman's Report was read by 95.7% of shareholders, the Auditor's Report was read by only 56.4% of shareholders. Lee and Tweedie state that:

> While most auditor's reports are of a standard unqualified nature, confirming that a true and fair view is shown in the financial statements, the fact that a qualified report could remain undetected by the individual private shareholder is rather alarming.[10]

They go on to add more specifically that:

> The auditor's report was the least thoroughly read piece of information. Indeed 52.5% of the shareholders without any accounting experience did not study it at all, and even 38.4% of the

---

[5] The Institute of Chartered Accountants in England and Wales, Statements on Auditing, U1, *General Principles of Auditing.*

[6] Pacific Acceptance Corporation Ltd. v Forsyth and others, 92 W.N. 29.

[7] From Baar v Snowy Mountains Authority (1970) 92 W.N. (N.S.W.) 472, in K.E. Lindgren, 'Professional Negligence in Words and The Privy Council', *Australian Law Journal*, April 1972, p. 190.

[8] R. Baxt, 'The Modern Company Auditor—A Nineteenth-Century Watchdog?', *Modern Law Review*, July 1970, pp. 413–431: 'Those in favour of a continued development, in line with desirable standards, of the principle that shareholders of companies should be given better and more carefully assessed information about their companies, so that they reach informed decisions about its management and their participation in it, would, it is suggested, ..., wish to see a departure from the 'watchdog' formulation.'

[9] T. A. Lee and D. P. Tweedie, 'Accounting Information: An Investigation of Private Shareholder Usage', *Accounting and Business Research*, Autumn, 1975.

[10] *ibid.*, p. 281.

qualified accountants did not apparently consider it important enough to examine.[11]

They conclude:

> ... it appears that a large proportion of the investing public could be taking what they read in the published financial statements at face value.[12]

Lee and Tweedie next examined which parts of the annual report influence shareholders in their decisions to buy, sell or hold shares, and the extent to which each part is such an influence. Shareholders were presented with a list of seven items:

> Profit and loss account; balance sheet; directors' report; notes to the accounts; statistical data; and auditor's report.

They were asked to rank each item on a 5 point scale of importance: 1 = maximum importance; 2 = great importance; 3 = moderate importance; 4 = slight importance and 5 = no importance.

It was found that Auditor's Report was ranked 7th (last) in importance with a mean score of *3.94*. The authors write that 'half of the shareholders stated that the auditor's report could be ignored in any investment decision'.[13] Moreover, 'the auditor's report and notes to the accounts [were] rated in the slight to no importance category by those respondents with no accounting information of any kind.'[14] These would be perhaps the very shareholders who we would expect to rely on the Auditor's Report for support that the accounts were sufficiently reliable and upon which an investment decision could be based.

Shareholders were next asked an open-ended question on what particular pieces of information contained in the various parts of Annual Reports they found to be useful when they made their investment decision. The Auditor's Report was not mentioned in their replies.

One further piece of indirect evidence as to the probable lack of importance of the Auditor's Report is that shareholders argued that the *future prospects* of the Company dominates all other items in utility in making investment decisions. Future prospects were sought in the Chariman's Report and in the Financial Press—sources not subject to the independent audit report.

New Zealand evidence

Wilton and Tabb[15] of the University of Auckland conducted a counterpart investigation in 1977 into private shareholder usage of financial statements in New Zealand and corroborated many of the Lee and Tweedie findings.

Like Lee and Tweedie, the first question they asked related to the extent to which each particular section of the annual report is read by shareholders. Wilton and Tabb sum up their findings on the Auditor's Report in the following way:

> ... of great concern is the result pertaining to the presumably authorative [*sic*] auditor's report. 48.5% of respondents do not read it at all and only 11.5% claim to read it thoroughly. Conclusions might be drawn from this that a qualified auditor's report is likely to go undetected by almost half of the shareholders of companies. On the other hand, it may be that shareholders know the accounts have been audited and hence may be satisfied that this statutory requirement has been justified. We cannot of course discount the possibility that shareholders may glance at the report to ensure it is unqualified but do not regard such action sufficient to claim that it has been read in any detail.[16]

Again, like Lee and Tweedie, the NZ researchers asked respondents to assess which aspects of the annual reports are used for investment decisions. The auditor's report was again ranked last in importance (on a 1–5 scale) with a mean of *4.22*. The researchers state:

> The auditor's report was regarded by 89.7% of respondents as having little or no importance in their decision making process.[17]

Appendix 1 provides a formal analysis of these surveys.

The auditor's social function

Collectively, the UK and NZ evidence casts serious doubts on the implied importance of the Auditor's Report in the investment decision-making process. There seems to be more rather than less evidence that the Auditor's Report is neither read nor used in making investment decisions. Admittedly this evidence does not include all potential users of financial statements, but it conveys a significant point of view which casts doubt on the legal interpretation of the auditor's role. It could be used to support the contention that in the future the auditor's liability could be a myth, with many Courts less inclined to rely on the word of the investor who claims he was misled by the Auditor's Report. Perhaps the Courts will require the investor first to prove that he read the Auditor's Report and acted upon it. The auditor may soon introduce this mitigating evidence in litigation to cast doubt on the social and legal interpretation of his function in society. To do so, however, could cast doubt on the need for the audit function.

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[11] *ibid.*, p. 282.

[12] *ibid.*

[13] *ibid.*, p. 283.

[14] *ibid.*

[15] R. L. Wilton and J. B. Tabb, 'An Investigation Into Private Shareholders' Usage of Financial Statements in New Zealand', *Accounting Education*, May, 1978, pp. 95–98.

[16] *ibid.*, p. 96.

[17] *ibid.*, p. 98.

There are other foundations on which the myth of audit liability can be supported, even if a litigant could prove reliance and an inducement to act on the faith and truth of an audit opinion. The profession to date has taken a defensive attitude toward legal liability. The attitude to protection has been to advocate adherence to audit standards and to have 'adequate' professional indemnity insurance. These may of course be necessary as elements in a comprehensive package for defence and protection in litigation. But in relation to indemnity insurance and litigation, it is relevant to ask: why is the auditor being sued? Generally it is because he is the most accessible. The knowledge that auditors carry heavy professional indemnity insurance may encourage litigation against them—the 'ability to pay' criterion. Further, such an overt protection strategy could be construed as an indirect admission by the profession that auditors are the right party against whom to take action. Other professionals, some medical practitioners for instance, make it known in order to discourage litigation that they have no indemnity insurance and that their assets are safeguarded through family trusts. While not advocating this procedure for application by auditors, since it appears unethical and inconsistent with professional responsibility, it serves to illustrate the point that the attitude to liability by auditors may in fact be a positive inducement to litigation.

The current attitude is further clarified in the following statement:

> In recent years, the burden of litigation on independent auditors has grown enormously, along with a vast increase in class action law suits, some of which have little, if any merit... The solution to this problem lies in clarification of the criteria for determining the legal liability of auditors. This hopefully will come from a reasonable evaluation of court decisions.[18]

In view of the current public and legal perception of audit responsibility, it is difficult to see how the Courts will do anything more than perpetuate the current perception of liability based on a broad social role. While unclear, the implication of a continuation of the current perception of the audit role is for liability on a wide scale and to a wide variety of financial statement users. In order to prevent or reduce litigation, the auditing profession needs to be more positive in defining and defending what it sees as its social role for the purpose of legal interpretation.

Business and information risk

The issue concerning risk, uncertainty and the auditor has been discussed by Carmichael.[19] Investment in securities has two distinct types of risk. Information risk is associated with the preparation and distribution of financial information, while business risk represents forces inherent in an uncertain economy:

> The auditor's role is to add credibility to financial information. The auditor cannot change the risk of doing business. Neither is it possible to guarantee the success of the businesses that are audited. One important facet of the free enterprise system is that every business has the opportunity to fail.[20]

Any loss suffered by an investor has a business risk element, and it is possible that auditors are being sued for losses suffered as a result of this business risk:[21]

> Predictably—and it's one of the few accurate predictions possible when a company declares bankruptcy—everyone involved in the issuance of the financial statements, including the independent auditors, has been named in a class action

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[18] H. Kapnick, the then Chairman of Arthur Andersen & Co., from a statement made January 30, 1978 before the (Moss) Subcommittee on Oversight and Investigations.

[19] D. R. Carmichael, 'Risk and Uncertainty in Financial Reporting and the Auditor's Role', *Auditing Symposium III*, edited by Howard F. Stettler, University of Kansas, 1976, pp. 49–73.

[20] *ibid.*, p. 51.

[21] There is no direct evidence to indicate the extent to which this might be happening. The attitude to, and causes of, economic loss to litigants is an area requiring further research.

suit alleging past financial statements were false and misleading.[22]

The point can be illustrated by the failure or by the reporting of large losses by property development and finance companies in Australia during the early 1970s. Such companies were reporting profits and strong balance sheet positions prior to their collapse or asset write-downs. The community feeling as reflected through press and investigating committee reports following these events implied negligence by the auditors in issuing 'clean' audit reports for the year prior to the event or loss reports. In some cases the auditors were subject to litigation. There is no doubt that investors suffered losses due to these events, but the property values reported in the accounts and given a 'clean' audit opinion were based on conditions current at the time and were within the bounds of generally accepted accounting principles. The losses suffered were due to subsequent changes in business conditions within the property sector of the economy: a business risk. The auditing profession therefore needs to emphasise its explicit role of reduing *information* risk. The audit does not, and should not be expected to, eliminate business risk by attempting to predict future outcomes, and auditors should not therefore be held responsible for a function outside the scope of the audit opinion. It would appear that Courts to date have not considered the business risk element inherent in losses suffered by investors. Negligence should arise only to the extent that a failure to report has not portrayed the risks under which a company operates. While it is difficult to determine which part (if any) of an economic loss is due to the failure of an auditor to reduce information risk, the distinction should be required for an investor to prove a case.

Taken further, the evaluation of business risk is a matter of judgement. If business risk is considered a legitimate part of the audit opinion, then legal precedent provides sufficient evidence that errors of judgement do not involve negligence.[23] If the auditing profession wanted to improve the utility of audit reports through forecasting (and therefore including business risk), a completely new legal and professional role would need to be formulated.

Symbolism

The conventional description of the auditor's output, e.g. as a certificate, is misleading. The audit report is a symbol,[24] and as such a 'clean' opinon is only a reminder that an audit was undertaken and has little utility in investment decisions.[25] This assertion is consistent with the material considered earlier on audit report readership. Most audit reports are stereotyped versions of a standard format, and unless the meaning of 'auditing standards', 'principles', 'opinion' is understood, the audit report appears to be either misinterpreted, or not read. Reader education is therefore important.

Directors' statement

In Australia at least, directors are required (s.162A Companies Act) to attach a statement to the annual accounts giving their opinion on a wide range of matters within the firm's balance sheet and profit and loss statement. This statement is not subject to audit verification, and has not been used effectively as a defence by auditors. Many of the items reported upon by the directors are matters considered by the auditor in arriving at an opinion on the financial statements. For example, the directors are required to state whether they took reasonable steps to ensure bad debts were written off and an adequate provision for doubtful debts created. The directors, as the shareholders' representatives, are responsible for the financial statements, and as such their report should be utilised to a greater extent. This would be consistent with the Lee and Tweedie findings mentioned earlier, where 41.2% of shareholders felt that the legal responsibility for the annual financial report rested in the hands of the Board of Directors.[26] Perhaps the auditor should refer to the directors' statement directly as evidence used in the formulation of the audit opinion, unless there is evidence that the directors' statement is misleading. This may focus more attention on the people directly responsible for the firm's financial position and the reporting of that position.

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[22] D. R. Carmichael, *op. cit.*, p. 49.

[23] N. M. Stephen, 'Accountant's Legal Liability', *Chartered Accountant in Australia*, July 1970, p. 6.

[24] L. J. Seidler, 'Symbolism and Communication in the Auditor's Report', *Auditing Symposium III*, pp. 32–44.

[25] *ibid.*, p. 40.

[26] T. A. Lee and D. P. Tweedie, 'Accounting Information: An Investigation of Private Shareholders' Understanding', *Accounting and Business Research*, Winter 1975, Table 4, p. 7.

Accounting principles

While no-one would dispute the close relationship of accounting and auditing, the distinction between the two disciplines is worthy of note:

> ... auditing is not properly considered a subdivision of accounting but rather is to be viewed as a separate and closely associated field of knowledge and effort.[27]

As indicated above, company financial reports are the direct responsibility of management. It is their responsibility to determine the method and principles of statement preparation. The attest function of the auditor, however, is based on two foundations:[28] (i) the existence of a body of concepts (generally accepted accounting principles—GAAP) against which the financial presentation being examined can be evaluated, and (ii) the independence of the evaluation.

Financial statements are therefore prepared within the bounds of GAAP as selected by the entity management. These principles are established within the discipline of accounting, not auditing:

> Under conventional accounting rules, considerable flexibility is allowed the preparers of financial statements. The long standing debate over the issue of uniformity in accounting is evidence of the questionable effectiveness of the current role of auditors. That a multiplicity of standards, rules, and principles may be applied in the preparation of financial statements suggests an inherent difficulty in the role of auditors. The crucial point is that the preparers of financial statements are able to choose, within broad limits, the accounting rule they will apply in any given instance. The financial information they generate is, therefore, completely dependent upon that choice. Further, if the financial statements are prepared within the broad limits established by 'accepted principles', the auditor has no real ground for objection.[29]

The *individual* auditor is therefore faced with an external environmental constraint within which he must work. There is no evidence to suggest that this constraint has been recognised by audit report readers or Courts as outside the individual auditor's control. Rather the work by Beck[30] indicates that audit report readers place great reliance on the audit report as signifying that the financial statements consist of hard fact:

> The problem for accountants is particularly acute since they operate in what the public at large believes to be an area of black and white hard fact. The doctor and the lawyer may give opinions and hope that because they are so clearly only expressions of a view they may escape the consequences of being proved to be incorrect; not so the accountant who operates in a field regarded, by the layman at least, as very much one of factual statements which when proved to be inaccurate, immediately raise the inference of negligence.[31]

If compliance by a firm with GAAP does not reduce information risk, the accounting profession is negligent through its failure to establish principles suitable to the need, not the individual auditor who is constrained by this framework. The auditor can reduce information risk by monitoring 'fairness' in the application of GAAP but not in their inherent failure to convey realistic information. Further, when evaluating the use of alternative GAAP, the auditor can only determine 'preferability' on a subjective basis and would represent no more than a personal view. This will be the case until the objectives of financial statements have been agreed upon.

Judgement

As indicated earlier, errors of judgement do not necessarily imply negligence. Auditing standards are interpreted as a minimum or guide to what is adequate in terms of a duty of care. These standards should be subject to regular review to be consistent with contemporary commercial practice. For example, it is disconcerting to note that in Australia the only guidance on computer auditing given by the profession are Technical Bulletins[32] issued in 1971 and a revised Bulletin on Internal Control in a Computer-based Accounting System re-issued in 1976. The 1971 Bulletin is based on a statement issued by the UK profession in 1969. Computer technology indicates that audits may require more than these Bulletins suggest. This is not to say that individual audit firms do not create their own standards on these and other matters. If the individual auditor is judged by the level of professional standards then these standards must be current and provide a minimum requirement. Judgement can be used over and above that level. If professional standards are not consistent with current thought, they may be imposed from outside the profession at a level much higher than the profession and individual auditors can meet. Such levels may be based on outside parties' perception of the role of the external auditor. If this is the case, the audit opinion may legitimately be taken to convey the ideas revealed by Beck's study referred to earlier. Claims for misleading statements against auditors could flourish. Auditing standards must therefore be up to date, setting minimum requirements, not ideals, with professional skill and judgement providing the flexibility to meet given circumstances. Standards set by external parties based on society's ideals imply an audit report with the aura of a 'guarantee'.

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[27] R. K. Mautz and H. A. Sharaf, *The Philosophy of Auditing*, American Accounting Association, Florida, 1961, p. 158.

[28] F. T. Weston, 'International Accounting and Reporting Problems', in K. Berg, G. Mueller, L. Walker, *Readings in International Accounting*, p. 55.

[29] P. W. Wolnizer, 'Corporate Audit Committees and the Independence Question', *Chartered Accountant in Australia*, August 1978, p. 7.

[30] G. W. Beck, *Public Accountants in Australia—Their Social Role*, Australian Accounting Research Foundation, Accounting Research Study No. 5, 1974, p. 122. Shareholders see the audit report as providing assurance that the company's accounting statements are reliable and that the company is financially sound.

[31] N. M. Stephen, *op. cit.*, p. 8.

Summary and conclusion

The issue of legal liability of auditors is an area of professional concern. However, the real issue should be one of trying to provide a framework to counteract legal uncertainty.

The evidence presented by Lee and Tweedie and Wilton and Tabb and analysed in this paper provides a new and untried avenue of defence. The onus of proof of reliance on the audit report may be now more squarely upon the individual suffering a loss, and could be used to clarify the role of an auditor beyond the current perception.

In the event of reliance on the audit opinion and economic loss being proved, there are other avenues open to an auditor to minimise his negligence. The preceding material suggests broad areas requiring greater emphasis and research by the profession as to the auditor's role. The danger in this is to go too far, thus making the audit report a complete non-event. This is the inherent problem of broad disclaimers. Literature has been forthcoming on the need to improve the performance and standing of the auditing profession (e.g. effective internal discipline, audit committees, restrictions on the offering of 'other' services, etc.). These suggestions will provide stronger grounds for formulating and supporting the conventional audit opinion. But surely the source of liability for misleading statements is the audit report itself. What is required are measures similar to those above, combined with a more detailed audit opinion. If the audit profession wishes to maintain a role in society, the quality of its output must be improved. To improve the readership of the audit opinion it must contain more of what the users of financial statements want. This is an area requiring further research. Of equal importance is the need to ensure that the resulting opinion does not perpetuate the current legal liability. The audit opinon should therefore refer directly to the principal processes, constraints and assumptions underlying an audit. The problem of misleading statements is a reflection of the misunderstanding of what the audit report represents, i.e., that it is the result of sample testing, GAAP, judgement, etc. The report should emphasise the underlying contractual relationship and therefore the use of that report. The best defence would appear to be the provision of all relevant information, an awareness of the sources of liability, and not hiding behind vague statements which are open to legal interpretation. The auditing profession must reduce the misunderstanding of what an audit report represents.

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[32] The Institute of Chartered Accountants in Australia, *Technical Bulletin F3:* The Audit of Computer-based Accounting Systems, December 1971. The Institute of Chartered Accountants in Australia and Australian Society of Accountants, *Technical Bulletin F2:* Internal Control in a Computer-based Accounting System, March 1976.

APPENDIX 1

TABLE I

Aspects of Company Financial Reports Read by Shareholders

	Read Thoroughly		*Read Briefly for Interest*		*Not Read at all*	
	*L & T**	*W & T*	*L & T*	*W & T*	*L & T*	*W & T*
Chairman's Report	51.6%	51.0%	44.1%	35.1%	4.3%	13.9%
Profit & Loss Account	46.5%	48.5%	40.4%	38.2%	13.1%	13.3%
Directors' Report	35.0%	37.0%	43.3%	44.2%	21.7%	18.8%
Balance Sheet	35.0%	40.6%	41.7%	43.0%	24.3%	16.4%
Notes to Accounts	29.4%	22.4%	36.4%	44.2%	34.2%	33.4%
Statistical Data	26.5%	29.7%	37.1%	41.2%	36.4%	29.1%
Auditor's Report	17.4%	11.5%	39.0%	40.0%	43.6%	48.5%

*L & T represents Lee and Tweedie; W & T represents Wilton and Tabb.

TABLE II

Shareholders' Views on the Importance of Sections in the Annual Report

Rank	*Statement*	*Mean*	
Of Great to Moderate Importance		*Lee and Tweedie*	*Wilton and Tabb*
1	Profit & Loss Account	2.66	2.60
2	Chairman's Report	2.76	2.98
Of Moderate to Slight Importance			
3	Balance Sheet	3.07	2.75
4	Directors' Report	3.49	3.06
5	Notes to the Accounts	3.69	3.81
6	Statistical Data	3.72	3.78
7	Auditor's Report	3.94	4.22

TABLE III

Understanding of Reporting Responsibilities

Respondents indicating that the legal responsibility for the annual financial report is in the hands of:	
. the chairman of the company	6.4%
. the board of directors	41.2%
. the financial director	3.5%
. the company accountant	2.5%
. the company's auditors	7.8%
Respondents giving other answers	0.6%
Respondents stating they did not know who was responsible	12.2%
Respondents giving multiple answers	20.5%
Respondents giving no answer	5.3%
	100.0%

On the Integration of Accounting Research on Human Information Processing

Doug Snowball

There are few areas of accounting research currently receiving greater attention in the United States than the impact of accounting information upon the judgments of individuals. Though research within the area has only a short history, there are indications that the current level of activity represents more than a passing phase. The prevailing user orientation provides a strong justification for the research and the more recent studies appear less susceptible to criticism on methodological grounds than were earlier efforts within the area. Despite the growing quantity and quality of research, one problem associated with the area—the inability to integrate research findings—has become increasingly visible.

The term integration typically refers to the process of 'forming into a whole'. Attempting to form a 'whole' from the numerous accounting studies relating to individual judgments is especially frustrating, for rarely can the results of one study be related to those of other studies with any reasonable degree of confidence. Overall, the studies provide little evidence that some form of structure underlies the research area. Without that structure, the variety of perspectives adopted by the researchers, the variety and nature of the issues explored, the use of alternative approaches to explore the same issues, and differences in the specific dependent or independent variables of studies that would otherwise have much in common, become effective barriers to the achievement of synergistic benefits from the research. In short, the chances of achieving general conclusions from the research activities are greatly reduced by the uncoordinated nature of the research effort.

The integration problem is the primary focus of this paper. The paper consists of five main sections. First, the human information processing (HIP) view of accounting is presented, and the various operations of that system are described. Second, the evolution of accounting research in the area of HIP is examined critically with particular emphasis given to the problem of integration. The recent increased use of three approaches to HIP (the Bayesian, regression and cognitive style approaches) is noted, as is the emerging interest in a fourth approach (process tracing). In the third section, these approaches are described; this section is followed by an assessment (from an accounting research standpoint) of the characteristics, benefits and limitations associated with each. In assessing the approaches, the relationship between their use and the problem of integration is raised; the last main section of the paper specifically addresses this question. It suggests that multiple use of these approaches provides a means by which the need to integrate findings may be balanced against (a) the need to examine issues in a comprehensive rather than a partial fashion, and (b) the need to achieve some form of convergent validity.

The human information processing view

The HIP view reflects the cognitive model of man.[1] Man is pictured as a possessor of goals and aspirations, and as motivated to achieve those ends. In pursuing these goals, reliance must be placed on fallible information as the basis for predicting, and adapting to, the environment. How man reacts to the cues provided by the environment is a function of the HIP system. This HIP system is concerned with identifying and acquiring potentially useful stimuli, translating and transforming the stimuli into meaningful patterns and using these patterns in choosing a response (see Suedfeld, 1971).

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[1] See Thompson and Van Houten (1970) for a more extensive description of the cognitive model.

Figure 1

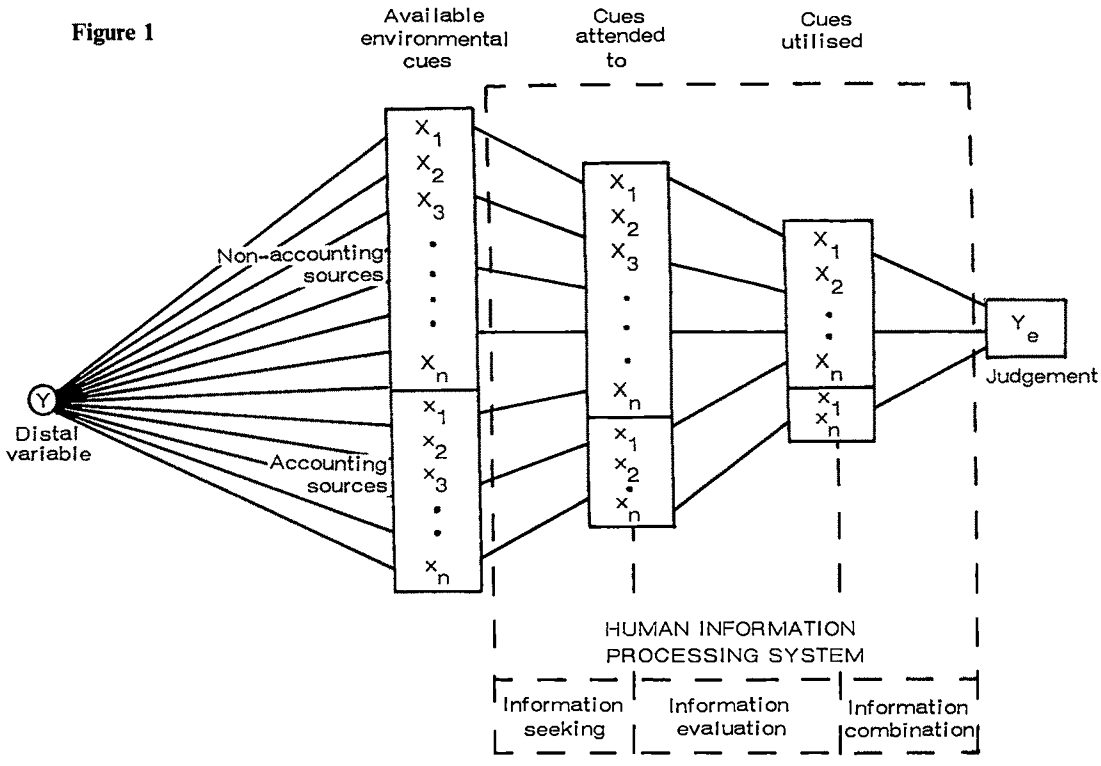

Figure 1 diagrammatically represents three phases of HIP in accounting contexts—information seeking, information evaluation and information combination. Y (the distal[2] variable) represents that portion of the environment which is to be judged or predicted by the individual. For this task, a number of environmental cues from both non-accounting sources ($X_1, X_2, \ldots X_n$) and accounting sources ($x_1, x_2, \ldots x_n$) are potentially available.[3] Not all the cues available will be attended to, indeed many will not even be perceived by the judge. Those cues to which the judge attends reflect his perceptual awareness and the directions of his *information seeking* activities. The *information evaluation* phase will reject some of these cues as inappropriate for the judgmental task; in the *information combination* phase,[4] the remaining cues are combined to produce the individual's judgment (Ye). It is claimed neither that the three phases always operate in the sequence shown nor that a clear distinction between them is always possible. However, they are important activities of all HIP systems and provide a useful framework for discussion of the research.

Accounting research on HIP

The relationship between available environmental cues and the distal variable Y has been the focus of the 'impersonal' approach to the predictive ability criterion described by Beaver, Kennelly and Voss (1968). Some behavioural accounting research, on the other hand, has been concerned with the relationship between the cues and the judgments reached from them (i.e., the operations of the HIP system depicted in Figure 1). The evolution of accounting research within this broad area may be viewed as extending over three stages which follow a roughly chronological sequence.

Stage I. Within Stage I, studies have sought evidence of differences in judgments as a consequence of variations in the information content of the accounting cues provided. In these studies, minimal attention has been given to the conceptual processes that underly an individual's judgment and the cues supplied have generally been confined to the outputs of accounting systems. Typically, the focus has been on the effects of alternative, accepted accounting methods (e.g., different depreciation policies and inventory flow assumptions) or the effects of new reporting proposals (e.g., multiple statements and human resource accounting). Studies within Stage I include Benjamin and Strawser (1974), Bruns (1965), Dyckman (1964), Elias (1972), Hendricks (1976), Jensen (1966) and McIntyre (1973).

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[2] *Distal:* situated away from centre of body or point of attachment, terminal (*Concise Oxford Dictionary*).

[3] Non-accounting sources are those sources of information (e.g., brokers, financial analysts, the financial press) other than reports generated by accounting systems. The distinction between accounting and non-accounting sources is not based upon the nature of the cues supplied, for some information supplied by these non-accounting sources may have its origin in accounting systems. Other sources are viewed as performing two roles—supplying cues that are currently unavailable from accounting sources and sometimes mediating between the accounting systems and the individual judges.

[4] A better label would be *information integration* phase, but its use would be confusing in view of the theme of the paper.

Because of the emphasis upon the impact of variations in the 'content' dimension, psychological theories and findings have provided little guidance within Stage I, and indeed a lack of underlying theory is characteristic of the research.[5] The importance of the content dimension cannot be questioned; however, to focus solely upon that dimension does not appear to be a fruitful approach. The failure of Stage I studies to give adequate recognition to the complexity of the issues involved gives rise to three major criticisms. First, the focus upon the content dimension confines integration of findings to studies that deal with the same reporting issue. Second, variations in the content dimension typically are accompanied by other changes in the information display (e.g., the number of cues supplied), thus raising the danger that misleading inferences will be drawn from the results. Third, the interpretation of findings is hampered by the lack of explicit recognition given to the various stages of HIP that were identified in Figure 1.

An illustration may highlight the significance of the third criticism. Suppose that the issue of the reporting of forecast data was examined in a study of the Stage I type. Suppose further that no differences in responses were found to result from supplementing traditional accounting reports with forecast information. Several explanations could be offered for this finding. Users of the reports may have ignored the forecast data entirely; they may have attended to the data but rejected it as unimportant to the particular judgement; the data may have been considered relevant but weighted less heavily than other cues supplied; or judgmental implications of the forecast data may have paralleled those of the traditional data supplied in reports. The validity of these explanations can be assessed only through analyses of the several phases of HIP.

Stage II. Stage II studies reflect a movement toward the study of HIP variables other than merely the content dimension of available cues. This movement has led some researchers to examine very basic questions relating to the way in which individuals perceive accounting data. For instance, Hofstedt (1972b) has compared reactions to accounting versus non-accounting data; Kennedy and Waterhouse (1974) have examined the perceptions of the variability and accuracy of accounting data by CPAs, bankers and students; and the study by Baker and Haslem (1973) sought to gauge investors' reliance upon specific information sources (including accounting reports). Other studies have examined the judgmental impact of data properties other than content. Examples include the effects of data aggregation in lending decision situations (Abdel-khalik, 1973); the effects of presentation format upon investment choices (Lusk, 1973); and the effects of conflicting cues within annual reports (Hofstedt, 1972a). Research within Stage II also has broadened the HIP variables studied to include individual characteristics of the information processor, such as field independence/dependence (Lusk, 1973) and tolerance of ambiguity (Dermer, 1973).

Stage II studies have made a major contribution by recognising the complexity of the task of conducting research on HIP. They highlight that a mapping of the multi-dimensional characteristics of accounting data and users' perceptions of that data is a necessary precedent to building theories that predict the consequences of interactions between particular accounting measurements and the HIP system. However, the research efforts do not distingush clearly the various phases of HIP, nor can their findings be readily integrated. In part, these problems reflect the absence of commonalities between the methodologies employed. The comments by Hofstedt and Kinard (1970, p. 43), though directed at a different area of behavioural accounting research, apply to the Stage II (and Stage I) research:

> ...studies use different methods, different dependent variables, cite different authorities, hold different variables constant (or assume them away) and—not very surprisingly—come to different conclusions.

Stage III. Studies within Stage III give more explicit recognition to the HIP view of accounting; more specifically, they are characterised by the use of several broad psychological approaches to research on HIP. The Bayesian approach (e.g., Dickhaut, 1973; Kennedy, 1975; Wright, 1979), the regression approach (e.g., Ashton, 1974a; Joyce, 1976; Libby, 1975; and Wright 1977b), and the cognitive style approach (see Dickson, Senn and Chervany, 1977; Mock, Estrin and Vasarhelyi, 1972; and Driver and Mock, 1975), together have dominated recent accounting research in the area. Interest in a fourth approach (process tracing) is emerging (see the AAA Report of the 1976–77 Committee on Human Information Processing, 1977; Briggs, 1979; and Stephens, 1979). Of considerable interest are recent studies that combine certain of the approaches (e.g., Mock and Vasarhelyi, 1976; Savich, 1977; McGhee, Shields and Birnberg, 1978; Mock and Turner, 1979).

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[5] The work relating to functional fixation (see Ashton, 1976; Abdel-khalik and Keller, 1979) represents a notable exception.

The differences between the approaches are such that most accounting contexts are compatible with the use of at least one of them. Together, the several approaches offer two broad benefits for accounting research in the area:

(a) they provide a sound basis, rooted in psychological theories and methodologies, from which accounting HIP research can proceed; and

(b) they promise to have a positive and strong influence on the ability to integrate findings of accounting studies.

Less global benefits are that they should lead to more careful distinctions between the three phases of HIP and that, if anything, the range of variables examined will be expanded by their combined use.[6] The following examination of the various approaches is motivated by the substantial benefits promised by their use in accounting research.

Approaches to HIP

This section describes each of the approaches and identifies the focal points of the related psychological research. The intent is merely to provide a basis for the subsequent examination of the broad accounting implications of the approaches; the brevity of the descriptions reflects this intent.[7] It should be noted that the term 'approach' is used throughout this paper because of, rather than despite, its imprecise meaning. It is intended merely to connote a unifying thread or common perspective, around which studies may be grouped. The unifying thread may be a model, a set of variables of interest or a research method.

The Bayesian Approach

The Bayesian approach constitutes a normative-description research strategy. Barclay, Beach and Braithwaite (1971, p. 392) have stated that

> ... the strategy for psychological use of normative models has been to assume that they are models of how people solve problems, predict events, make decisions, and so forth, and to evaluate the assumption by comparing human behaviour with the model's prescription.

The hope is that human behaviour will be in accord with the normative model or at least that departures from the prescribed behaviour will be systematic.

The concept of subjective probability is an integral part of the subjective expected utility theory of decision making. Subjective probabilities are subjective degrees of belief in the truth of a particular proposition. Inevitably, the manner in which humans revise their subjective probabilities on the basis of new data has become the object of considerable research attention. A primary concern has been the evaluation of the normative model for probability revisions—Bayes' Theorem—as a descriptive model of HIP.

Bayesian research has highlighted the phenomenon of conservatism. That is, when humans receive new information they revise their subjective probabilities in the direction indicated by the normative model,

> ... but the revision is typically too small; subjects act as if the data are less diagnostic than they truly are. (Slovic and Lichtenstein, 1971, p. 963.)

The apparent ubiquity of the phenomenon in early research offered hope for descriptive theory development through appropriate modifications of Bayes' Theorem. However, the search for explanations for conservatism has not only failed to provide unequivocal support for any one explanation, but has raised fresh doubts as to the role of conservatism in theory development.

Among the explanations offered are that conservatism reflects misaggregations of data; that it reflects misperceptions of the data generator; and that it is attributable to response bias (specifically, avoidance of extreme values on the probability scale). Two other explanations have more profound implications for the use of Bayes' Theorem in descriptive theory development. Some argue that conservatism is unique to the experimental situation and reflects inappropriate generalisations from the individual's customary environment. Others have argued that conservatism reflects the use of short-cut, non-Bayesian strategies.

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[6] For example, explicit consideration to sources of information other than accounting reports has been given by some studies in Stage III (e.g., Wright, 1977b; Stephens, 1979).

[7] The brevity of the descriptions also reflects prior coverage within the accounting literature. Fuller descriptions of the approaches are available in Ashton (1974b), Driver and Mock (1975), Libby and Lewis (1977), the AAA Report of the 1976–1977 Committee on Human Information Processing (1977), Snowball (1976), and Benbasat and Taylor (1976).

The growing consensus that human judges do not behave optimally has resulted in a significant shift in the research focus to the sources of the observed HIP biases. Strong evidence of heuristic procedures (whereby judgments are formed on the basis of limited processing of a subset of the available information) and of cognitive biases of a statistical nature have been observed.[8] Within these specific areas of interest, the role of the Bayesian model itself has been reduced; it can serve as a benchmark or evaluation device but cannot purport to describe the individual's information processing.

The bulk of the research within the Bayesian approach has concerned the information evaluation and combination phases of HIP. However, within the approach it has been recognised that judges frequently have active control over the amount of the data on which judgments are based. Individuals' decisions to terminate information seeking have been compared with the optimal stopping points prescribed by normative models (derived from subjective expected value theory). Human behaviour under two stopping rules has been examined.[9] Under *optional stopping*, information seeking ceases when the accumulated evidence meets a criterion established by the model or subject; under *fixed stopping*, the amount of information to be sought is determined prior to any information seeking. Consistent findings are rare among the studies so far performed. Reasonable agreement exists only with respect to evidence of conservatism in optional stopping tasks. It seems that in information seeking behaviour also, humans tend to respond in the directions indicated by optimal models, but not strongly enough.

The Regression Approach

The regression approach also seeks to describe information processing behaviour via statistical models, although regression techniques rather than probability theory provide the framework. The approach is concerned exclusively with the information evaluation and combination phases of HIP. Two lines of inquiry are detectable within the approach.

The first line of inquiry focuses upon the lens model (of which Figure 1 is a modified version), and stresses the interrelationships between the human organism and its environment. Multiple regression equations summarise the relationship between environmental cues and the value of the variable to the judged (the distal variable), and between the cues and the individual's judgment. The importance of the model lies in its recognition that:

> ... without a knowledge of the limitation placed on achievement by the statistical characteristics of a given ecological or response system, it is impossible (a) to *evaluate* a subject's achievement within that system, (b) to *compare* a subject's achievement across ecological situations which have different statistical characteristics, and (c) to *understand* why the subject's achievement was as low or as high as it was. (Hursch, Hammond and Hursch, 1964, p. 43).

The second line of inquiry has focused solely on one side of the lens—the relationship between cues and human judgements. The objective is to develop mathematical equations that are 'paramorphic representations' of how data are combined and weighted by judges. No attempt is made to analyse the internal processes involved; these are regarded as operating within a 'black box'. Because of the substantial difficulties in modelling the relationship between cues and the criterion value in accounting contexts, accounting research is likely to concentrate its attention upon this second line of inquiry.[10]

Much of the regression research has used the linear model to capture the policies of judges. Initially this reflected the desire to commence with a simple model and to introduce subsequently greater complications. More complex models have been offered; these include curvilinear, configural, conjunctive, disjunctive and lexicographic models. Additional predictive benefits have not resulted from these more complex models, but, as Goldberg (1968, p. 488) has indicated:

> ... in study after study our initial hopes went unrealized; the accuracy of the linear models was almost always at approximately the same level as the reliability of the judgments themselves, and—no doubt because of this—the introduction of more complex terms into the

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[8] Swieringa *et al* (1976), Wright (1977a) and Joyce and Biddle (1979) offer reviews and examples of this research.

[9] A more detailed examination of this area of research has been provided by Snowball (1976).

[10] Unless otherwise specified, references to the regression approach hereafter relate only to this second line of inquiry.

basic equation rarely served to significantly increase the cross validity of the new model.

Various explanations have been offered: that humans are linear processors despite their introspections and protestations; that complex strategies are utilised, but not for the particular judgmental tasks that have been studied; and that the models examined have lacked the sophistication necessary to capture the nonlinear processing. The most favoured explanation, however, is that the complexities of processing are obscured by the power of the linear model. The contexts in which models have been evaluated are characterised by conditionally monotonic relationships between cues and the variable to be judged, and by the presence of significant measurement error. Linear models are likely to demonstrate good fit to human judgments in these contexts (see Dawes and Corrigan, 1974).

The Cognitive Style Approach

The cognitive style approach focuses upon HIP (and often, upon information seeking behaviour in particular) in complex environments and eschews any attempt to identify specific models of judges. The approach is distinguished by its assumption that it is possible and useful to classify individuals according to how they use information; that is, to classify according to the customary style or mode of their information processing activities. These cognitive styles are presumed to be useful in predicting the responses of HIP systems.

Much of the research within the approach has links to the theories developed by Schroder, Driver and Streufert (1967). Their work centred upon the reactions of HIP systems to changes in environmental complexity (and in particular, to changes in information load). It was hypothesised that a level of environmental complexity exists at which the HIP system functions best. Increases in environmental complexity below this point were expected to produce increases in the complexity of information processing; beyond this point, a regression to more concrete processing was expected. Empirical studies generally support the hypothesised U-curved relationship betwen environmental complexity and the complexity of HIP activities.

A major focus of this research also has been the impact of differences in cognitive complexity (a person's learned ability to use integratively complex conceptual processes) upon reactions to increased environmental complexity. Expectations that cognitively complex individuals would achieve higher processing levels across a range of environmental complexity generally have been fulfilled. On the other hand, the expected differences in optimal levels of environmental complexity have not been observed. Individuals varying in cognitive complexity have been found to maximise the abstractness of their processing at approximately the same level of environmental complexity.

Research within the approach has not been confined to the examination of relationships between environmental complexity, cognitive complexity and the level of processing. Constructs other than, but related to, cognitive complexity have been examined. A prime example of this is the development of decision style theory. Similarly, the effects of information load continue to attract research attention but the effects of other characteristics of information (e.g. the order and format of information displays) are also being subjected to scrutiny. Finally, the impact of cognitive styles and information structures is now being examined in terms of a variety of responses by the HIP system, including decision performance, decision speed, and amount of information selected.

The Process Tracing Approach

The process tracing approach differs markedly from the other approaches to HIP. Its major feature is that

> ...it goes beyond input-output analysis and attempts to obtain measures of the events between input and output. (Hayes, 1968, p. 252).

In other words, rather than infer the operations of the HIP system from the relationship between the information cues and the outputs (judgments), evidence directly relating to the HIP activities themselves is sought. Though other techniques have been used (e.g. measures of eye movements), the evidence is most commonly sought by asking individuals to describe their thought processes (e.g., see Clarkson, 1962; Kleinmuntz, 1968; Payne, 1976; Briggs, 1979).

The primary impetus for the use of process tracing may be attributed to the work of Newell and Simon (e.g., 1972). They have contended that only a few HIP characteristics are invariant over both tasks and decision makers, and that the nature and complexity of the task, rather than the individual per se, controls the responses of the HIP system. Humans have been characterised by them as serial (sequential) processors with limited short term memory: as a result, Newell and

Simon consider humans to be 'satisficers' rather than 'optimisers' in their behaviour. It is thus the task environment that determines the structure of the 'problem space' which, in turn, determines the possible processes by which the task may be performed. Under this approach, the verbal protocols (descriptions) of the individual are first broken down into phrases that are a 'naive assessment of what constitutes a single task assertion or reference' (Newell and Simon, 1972, p. 166); meaning may then be extracted by relating the references to the hypothesised problem space.

Positive features of the approach are the attention it focuses upon the mechanisms of the black box and the importance it attaches to the task environment. Furthermore, the methods employed may provide insight into any of the three phases of HIP identified in Figure 1, and may be used in conjunction with other approaches to the study of HIP.

The approach is most vulnerable to criticism directed toward the 'softness' of the data collected. Particular concerns relate to the ability of individuals to articulate accurately their cognitive processes; to the possibility that their cognitive processes may be affected by the verbalisations they are asked to provide; and to the subjectivity inherent in the analysis of protocols.[11] The use of automatic or semi-automatic protocol analysers (see Bhaskar and Simon, 1977; Bhaskar and Dillard, 1979) and the practice of combining protocol analyses with other evidence (see Payne, 1976; Briggs, 1979) reflect these concerns.

Evaluation of the approaches to HIP

The approaches provide distinct views of the HIP system. The Bayesian and regression approaches view the HIP system as a black box; the Bayesian approach relates the output of that black box to an optimal model, whereas the regression approach provides a mathematical or paramorphic representaion of the black box. The cognitive style approach rests on a broad conceptualisation of internal processes of the HIP system, but does not attempt to describe or represent specific models of human processors. On the other hand, '... process tracers insist on opening the black box to watch the mechanism inside while it is working' (Hayes, 1968, p. 252). The criterion for models of HIP may be merely accuracy of the predictions of human judgment that they provide. Alternatively, it may be argued that evaluation of HIP models should emphasise the degree of congruence between the model's internal structure and the judgmental processes of humans. How accountants view this issue will influence their choice of an approach.

No one approach can be viewed as a panacea for accounting research. The following statements, directed at the Bayesian, regression, cognitive style and process tracing approaches respectively, are illustrative of the criticisms that have been made)

> ... we see persistent, even stubborn, pursuit of topics for which the model is awkward... (Slovic and Lichtenstein, 1971, p. 725).
>
> ... the mathematical or paramorphic... representation is unsatisfactory both on account of its frequent lack of theoretical considerations and its failure to capture the selective and sequential aspects of cognition... (Hogarth, 1974, p. 298).
>
> ... the theories tend to be so complex that they are often difficult to evaluate; the definitions are often vague and/or circular and the derivations of hypotheses are not strongly logical. (Suedfeld, 1971, p. 2).
>
> Questions can be formulated about the reasonableness of the verbal protocol coding strategy employed by a researcher or the consistency with which it is applied, as well as the reliability and the validity of the results and conclusions stated. (AAA Report of the 1976–77 Committee on Human Information Processing, 1977).

The valid criticisms made of each of the approaches indicate that undue reliance on any one would be a mistake. To do so would limit the research in a number of ways. It would limit the extent to which convergent validity (the reaching of similar conclusions from evidence obtained from different sources and methods) could be established; it would entail some sacrifice of potential synergistic benefits from the research effort; and it might unduly confine the research to certain issues and contexts. Each approach has features that enhance its usefulness for research on certain accounting issues and contexts, yet render it less satisfactory for other purposes. Five of the dimensions along which the approaches vary are especially important.

First, most research on the initial phase of HIP—information seeking—has been undertaken with the use of the cognitive style approach, but it is clear that the area will be a focus (and strength) of process tracing research (see Payne, 1976; Briggs, 1979). The preliminary research in this area under the Bayesian approach has been neither extensive nor consistent in its findings. The regression approach does not readily lend itself to research on information seeking and it appears that only Abdel-khalik and El-Sheshai (1980) have sought to overcome this.

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[11] These issues are discussed in greater depth in Byrne (1977), Nisbett and Wilson (1977), Ericsson and Simon (1978), and Weick (1979).

Second, there are distinct differences in the judgmental contexts studied. Much of the Bayesian research by psychologists has utilised a simple experimental paradigm—often represented by the bookbag and pokerchip experiment—with relatively minor modifications. Typically, these experiments have featured conditionally independent data drawn sequentially from stationary, binomial populations. Few realistic accounting situations have characteristics that are especially conducive to use of the Bayesian approach and the need for modifications to the approach and/or the situation presents a challenging task for accounting researchers.

The tasks utilised in regression research to date also have been highly structured. There are practical limitations on the number of cues presented to judges, and the tasks are confined to repetitive judgments based on simultaneous (as opposed to sequential) presentations of cues. Despite these constraints, regression research so far has employed more varied and less artificial task settings than Bayesian research.

The cognitive style approach features highly complex, dynamic situations. Much of the early research utilised inter-nation and tactical war games, but later laboratory studies extend over a wide range of judgmental tasks. Moreover, some field studies (e.g., Stiles, 1972) have been undertaken in situations that are related to those confronted by users of accounting data. The concentration upon complex processing tasks is attractive to accounting researchers (e.g., Driver and Mock, 1975; San Miguel, 1976) but later discussion will point out some of the high cost it entails.

The foundations of the process tracing approach lie in man's limitations and adaptiveness in complex task environments and researchers (e.g., Briggs, 1979; Stephens, 1979) have employed some relatively complex, unstructured judgmental situations under the approach. In such situations, however, the problems of interpreting protocols become pronounced; caution will have to be exercised to keep task contexts within the capabilities of techniques of analysis. For example, Byrne (1977) has asserted that protocol analysis should be confined to situations where individuals find it easy to verbalise.

Third, some differences in the emphases given to three important classes of HIP variables—these being characteristics of the task; characteristics of the data and characteristics of the individual (the information processor)—exist between the approaches. The Bayesian and regression approaches have been associated with systematic attention to the effects of many characteristics of data but with minimal attention to characteristics of the judgmental tasks[12] and to individual characteristics. Exceptions to these norms have occurred, primarily in the form of examinations of the effects of personality characteristics within studies using the approaches (e.g., Brightman and Urban, 1974; Savich, 1977; McGhee, Shields and Birnberg, 1978). The cognitive style researchers initially focused most attention on one data characteristic (information load) and one individual characteristic (cognitive complexity) but the more recent research has been wider in its scope. The complexity of the task situations employed generally has precluded systematic attention to task characteristics, although the cross-contextual analysis by Mock and Vasarhelyi (1976) represents an important exception. The process tracing approach faces no inherent restrictions as to its emphases, but the clear implication of the work of Newell and Simon (1972) is that a strong orientation toward task characteristics will be displayed.

Fourth, the approaches differ considerably in how HIP performance is evaluated. The Bayesian approach offers accountants the use of a normative model that provides a benchmark for the evaluation of an individual's processing performance across studies.[13] Regression research that does not take the lens model approach sacrifices the ability to compare judgmental policies with optimal policies, although accuracy (the extent of agreement between Y and Ye in Figure 1) may sometimes be assessed. Furthermore, it is difficult to assess the relative performance of different judges, although assessments can be made of the consistency of judgmental policies, of self-insight into judgmental processes, and of consensus between judges. No optimal model is available under the cognitive style approach and attempts to compare the quality of the outputs of different human processing activities have been evaluated in terms of their level of complexity, and an isomorphic relationship between processing levels and the effectiveness of processing has yet to be demonstrated. The reported research that has used the process tracing approach has concentrated upon assessing the type and amount of information sought and used, and the type of decision rules employed. Emphasis has been upon describing operations within the black box with relatively little concern for the quality of its output. However, since process tracing may easily be used in combination with other approaches (as indeed Payne, 1976, recommends) it is clear that attention to the quality of processes and outputs is not precluded.

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[12] This assertion clearly is not applicable to regression research that uses the full lens model approach.

[13] Because of the normative model and the widespread use of the same experimental paradigm, past psychological studies within the approach may be related and integrated to a degree unmatched by research within the other approaches.

Fifth, unlike the cognitive style approach, both the Bayesian and regression approaches have 'built-in' measures of the diagnostic impact of an information item. To accountants, the ability to determine objectively the importance of a particular cue constitutes an attractive feature of the two approaches. Under the process tracing approach, the researcher may infer the importance of a cue by analysing the individual's introspections or other behaviours, but this clearly differs from having a 'built in' measure.

Integration and the use of approaches

The previous section stressed areas of differences between the psychological approaches, yet an earlier assertion was that increased use of these approaches would enhance integration of HIP research in accounting. To resolve the apparent inconsistency requires recognition of the complexity of accounting HIP issues and a broad view of the process of integration.

Accounting HIP issues are multi-faceted; that is, numerous elements or sub-issues can be identified within all but the narrowest areas of interest. Accordingly, it follows that research programmes (whether formal or informal) consisting of more than a single study are necessary to achieve any reasonable depth of understanding. Characteristics of such programmes should be that:

(a) the identification and study of sub-issues follow a logical pattern, whereby building blocks are provided in progressing towards the ultimate research goal, and
(b) efforts are made to confirm (and to assess the generalisability) of findings at each stage (i.e. for each sub-issue).

It is clear that the use of only one approach within programmes is likely to lead to incomplete examinations of HIP issues; on the other hand, the use of many approaches will limit the ability to link and relate findings. A middle ground, whereby the approaches adopted are few in number, but together enable multi-faceted issues to be researched thoroughly, seems desirable. The existence and acceptance of the several psychological approaches offers the opportunity for this strategy to be employed in accounting HIP research.

An apt (though well-worn) analogy is provided by jigsaw puzzles. First, the task of the jigsaw player also is to form a 'whole'; that is, to integrate pieces into a meaningful picture. Second, the player, like accounting researchers, must ensure that not only do the pieces fit together, but that all important pieces are included in developing the picture. Finally, either too rigid or too haphazard an approach can slow down the solution to a jigsaw puzzle; in accounting HIP research, either over-emphasis on one approach or the use of too many approaches can impede understanding of issues.

Multiple usage of the broad approaches to HIP is recommended both 'across' and 'within' sub-issues. Multiple usage across sub-issues refers to the use of different approaches as the research programme moves from one sub-issue to another. Multiple usage within sub-issues refers to the use of a different approach in subjecting findings from a study to further testing (or to the use of more than one approach within the same study). The two forms are highlighted in the rather extreme example that follows. The example is presented purely for illustrative purposes, without serious consideration of the merits or operational difficulties of the research undertakings described.

The complexity and amount of information presented in accounting reports appears to be increasing over time. The impact of the increasing information load upon human judgments represents a broad HIP issue around which a research programme may be structured or may evolve. Though study of such an issue is unlikely to commence in a field situation, a complex task environment would be appropriate for the initial exploration of the topic. As a result, the *cognitive style* and *process tracing* approaches may be favoured at the commencement of the programme. It also seems appropriate that the early focus should be upon information seeking activities under conditions of varying information loads; again, the use of the cognitive style and process tracing approaches is most consistent with that focus. The objectives of this initial work could include the determination of the effect of increases in the number of available cues upon the quantity and nature of cues sought out by the individual, and the assessment of individual differences in patterns of information seeking behaviour.[14] Although the complexity of the task environment may preclude evaluation of the effect of load variations upon the quality of judgments, the approaches would still allow an assessment of the effects upon the dispersion of judgments.

Suppose one of the conclusions of this initial research is that judgments vary less between those individuals operating under higher levels of information load (see Snowball, 1978). It may be argued that higher loads limit the opportunity to give adequate attention to each cue and force the individual to rely more heavily on perceptions of what constitutes a 'normal' or 'reasonable' judgment. On the other hand, the theories of Schroder, Driver and Streufert (1967) suggest that a regression to simpler processing activities under conditions of high information load may underlie the finding. The description and assessment of the cognitive style approach provided earlier indicate that if this sub-issue is to be resolved, another approach to HIP would need to be employed.

The *regression* approach may provide insight into the relationship between increased information load and the complexity of judgmental policies. The pattern of information seeking observed through use of the cognitive style approach should provide the basis for ensuring representativeness of cues supplied to judges within a regression study. Insight into the complexity of judgmental processes may be obtained from the mathematical representations, both in terms of the number of cues used and the extent of interactive use of cues. The theories of Schroder, Driver and Streufert (1967) would be supported by a finding that relatively less complex models are needed to capture the judgmental policies of individuals operating under very high levels of information load.

The use of the regression approach at this point in the programme shifts attention from the information seeking phase to the information evaluation and combination phases. Of special interest will be the weights attaching to particular cues under various information load conditions. The weights should enable the researchers to gauge which of the cues sought by subjects in the earlier research are most important to judgmental outcomes, and the extent to which usage of particular cues varies with changes in information load. Confidence in these findings may be enhanced by replications using the regression approach. The introduction of yet another approach, the *Bayesian* approach, also may be useful at this point. The Bayesian approach offers an alternative measure of the importance of cues. If this measure and the regression measure of cue importance under various load conditions are in accord, the inferences that can be drawn from the research are strengthened considerably.

The continued application of the process tracing approach also may serve to confirm findings of the Bayesian and regression research, as well as provide insights into the processes that underlie those findings. Earlier in this paper it was noted that individuals may be unable or unwilling to articulate accurately the mental processes they employ; also noted was the subjectivity inherent in the interpretation of the individuals' disclosures. However, if the individuals' introspections are consistent with the findings obtained by more objective approaches, this should result in increased confidence in both the introspections and the previous findings. By venturing into the black box, the process tracing approach may give added depth to the understanding of the impact of increasing information load upon HIP. Equally important is the unique role that the approach may play in the integration process itself. Not only can it provide confirmation of the effects of information load throughout each of the three phases of HIP identified earlier, but it may also generate explanations that lead to the reconciliation of conflicting findings obtained under other approaches.

Conclusions

Increased use of several psychological approaches to HIP has been a recent, marked feature of accounting research in that area. It is clear that coalescing several approaches in itself will reduce the difficulties encountered in relating individual studies to one another. However, this paper has argued that the coalescing should not result in dominance by any one approach, even within the study of a particular HIP issue. Rather, integrated use of several approaches within research programmes seems desirable. This would allow for more complete examinations of issues and would enhance confidence in the findings obtained. The strategy is most consistent with the goal of forming a 'whole' from the findings of accounting HIP studies; at the same time it reduces the danger that a particular approach will dictate the choice of accounting issues to be studied.

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[14] It should be noted that in these studies information load may be varied by increases in the numbers of cues available or by reductions in the processing time available to the individual (see Snowball, 1978). It is also noted that though the cognitive complexity approach is not conducive to evaluation of the optimality of information seeking behaviour, research within the Bayesian approach has compared human information seeking with the prescriptions of optimal models. Finally, it should be noted that effects of individual characteristics upon judgments are most likely to emerge in the information seeking phase (e.g., see Driver and Mock, 1975).

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This book on the lives of J. M. Fells, F. W. Pixley, E. Guthrie, L. R. Dicksee, A. E. Cutforth and F. R. M. de Paula has been published to coincide with the Institute's centenary in May 1980. The influence of these men on the development of accounting ideas is very great, and extended from the 1880s to the 1950s and beyond.

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Book Reviews

Planning and Control in Higher Education. *Anthony J. Gambino.* National Association of Accountants, 1979. 115 pp. $6.95.

Cases in Management Accounting: Context and Behaviour. The Rahlin Company—an Exploratory Study. *Edwin H. Caplan and Joseph E. Champoux.* National Association of Accountants, 1978, 88 pp. £5.95.

Many institutions of higher education in the United Kingdom have entered a period of financial stringency, falling real income per student, and perhaps actual decline in student numbers during the remainder of this century. They are increasingly being asked to justify their activities and to account for their use of resources and their performance to external financing bodies in terms of their effectiveness and their efficiency. Furthermore, within institutions, consideration has to be given to the efficiency of the various academic and service departments, decisions made concerning the allocation of resources, and in some cases decisions involving major cutbacks and reallocation of resources have to be taken. Clearly managements need a sound basis upon which to arrive at, and justify, such decisions; in particular they need to develop and employ appropriate methods for allocating resources and for subsequently assessing the performance of the component parts of their institutions. The reviewer argued at the 1979 AUTA Annual Conference that management accounting concepts should be applied more extensively in planning and control and performance assessment in institutions of higher education, and that this area had been neglected by academic accountants in universities and polytechnics. The National Association of Accountants' Research monograph, *Planning and Control in Higher Education*, was read therefore with considerable interest.

The purpose of Gambino's study was to examine the current and prospective application of management accounting in colleges and universities in the United States. The information was obtained through interviews, mail questionnaires and a literature search. The field study and mail questionnaire served as fact-finding devices regarding current practices and also as the means of eliciting opinions and recommendations regarding possible improvements. Gambino's literature survey revealed that there is a great deal of published literature on the subject of financial accounting and reporting and that, while little deals with managerial accounting concepts, there is a rich source of unpublished literature. Those wishing to familiarise themselves with the literature in this field will find the monograph of considerable value.

The questionnaires were sent to three groups: academic administrators, financial administrators, and state levels. The responses confirmed impressions gained by the reviewer from the literature and informal discussions on attitudes to cost information: the widespread use of full costs, the problems encountered in attempting to apply PPBS in higher education institutions, a strong feeling that the budget process should be improved, and the over-emphasis on process performance indicators and the problems surrounding the development of outcome measures of the educational process. Having analysed the questionnaires, Gambino devotes a chapter to each area investigated: Costing Concepts, Planning and Budgeting, PPBS and Zero-Base Budgeting and Accountability. He assumes the reader is not familiar with the techniques and systems in use and therefore there is little in-depth discussion. However, those desiring an introduction to the state-of-the-art in the United States should find the study useful, but they will recognise that Gambino has failed to identify and discuss the behavioural aspects of budgeting and performance assessment which can be of critical importance in institutions of higher education.

There is a sharp contrast between Gambino's book and the Caplan and Champoux *Rahlin Company* case study, also published by the National Association of Accountants. Caplan and Champoux believe that the field study approach can be especially valuable at the present stage in the development of our understanding of the relationships between accounting and organisational behaviour. By publishing the study in the form of a monograph they have been able to report on their objectives, methodologies and findings in more detail than in a research article. They have attempted to build on the research of Swieringa and Moncur[1] on the importance of organisational characteristics to the operation of participative systems in two respects. Firstly, they examined the behavioural effects of a total accounting system rather than limiting themselves to the budget process only. Secondly, they directed their attention specifically to the question: which personal and organisational variables tend to influence the success or failure of particular accounting techniques? The authors emphasise that the study was an exploratory one and should be considered as the first in a possible series of such studies.

The Rahlin Company designs, manufactures, and distributes apparel. The company is the leader in its industry and is one of the largest shirt manufacturers in the world. It has grown rapidly from a medium-size, family-owned enterprise to a billion-dollar, public-owned corporate giant and, as might be expected, this has placed severe strains on the organisation. Caplan and Champoux classify their findings, with respect to the company's accounting system, into two closely related categories: firstly, deficiencies in the accounting system that affect other organisational processes, including lack of timeliness of reports, functional rather than divisional or product focus, excessive reporting detail, and a relatively high error rate in the data; secondly, organisational weaknesses that influence the impact of the accounting system, including lack of strategic planning, inadequate communications, excessive pressures introduced into the budgeting process, and over-emphasis on the short-run performance indices generated by the accounting system. Overall the study highlights the importance of studying the accounting function as an integral part of the specific organisation.

This study is not only a valuable contribution to the literature on the behavioural and organisational aspects of accounting, but will also provide undergraduates with a fascinating insight into the impact of management accounting systems of a large company, which cannot be obtained from the textbooks. It is to be hoped that Caplan and Champoux will undertake and publish further studies.

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of Technology
John Sizer

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[1] Robert J. Swieringa and Robert H. Moncur, *Some Effects of Participative Budgeting on Management Behaviour*, National Association of Accountants, New York, 1975.

The Market for Labor: An Analytical Treatment. *John T. Addison and W. Stanley Siebert.* Goodyear Publishing Co., Santa Monica, Calif., 1979. xi + 500 pp. £8.50.

This is a textbook which aims at synthesising major theories in the field of labour economics and discriminating amongst alternative theories by reference to empirical studies.

Why bother to review such a book in *Accounting and Business Research*? In the first place, a knowledge of labour economics should, in this reviewer's opinion, be of increasing usefulness to anyone interested in financial and/or management accounting theory. Justification for this view can be found directly in the rapidly developing literature relating to employees and trade unions as accounting information users. It can also be found, indirectly, in the predominantly management accounting literature concerned with human asset accounting and the prediction and control of labour-related costs and performance.

Given the relevance of its subject area, the second reason for reviewing this particular book is that it has a number of characteristics which make it potentially especially useful to someone in the accounting and finance field who is seeking an entry to, or resumé of, the modern labour economics literature for his or her own teaching or research purposes.

To such a person, the book has the primary advantage that it summarises both the theoretical literature and empirical research findings (in a very thorough fashion) over most of the topics in labour economics which are likely to be of interest to an accounting and finance specialist. An indication of the range of such topics is given by a selection of the chapter titles, viz:

Chapter 2. The Demand for Labour.
3. The Supply of Labour.
4. Investments in Man.
5. Market Structure and the Efficiency of Labour Markets.
7. Negotiation and Conflict.
8. Collective Bargaining and the Structure of Pay.
9. Job Regulation.
10. The Distribution of Incomes.
11. Institutional Processes in Wage Inflation.

As will be observed, the valuation of human capital is covered in Chapter 4, and the analysis based on the distinction between investments in general and specific training should be of particular interest to those concerned with human asset accounting. As in the other chapters, a summary of the theoretical literature relevant to the topic is followed by a thorough review of the empirical evidence. On the empirical side, incidentally, it is interesting to speculate on parallels between demand for engineering degrees in the US in the 1950s and 1960s and the present position as regards accounting and finance degrees in the UK. The US data, as reported here, confirms a significant positive correlation between numbers graduating and graduate starting salaries two or three years earlier.

From a management accounting viewpoint, Chapter 10, which spells out the factors which determine differences in wage rates for similar jobs in different firms will probably be of interest, whilst the analysis of the role of search costs in determining the price, quantity and quality of labour (in line with the 'new' microeconomics) may provoke thoughts on how information systems might be changed in order to lower such search costs and improve allocative efficiency at both company and economy levels.

I also found Chapter 13, which covers such issues as the relationship between bargaining outcomes between firms and over time, particularly interesting from the point of view of the effects of information disclosure to unions. Throughout the book, it may be noted, the empirical evidence and analysis are drawn from both sides of the Atlantic, which is a particularly valuable feature from the British user's point of view, since in labour economics predictions are notoriously contingent upon contextual factors such as the institutional and legal frameworks of industrial relations—which differ significantly between the UK and USA.

As a 'state of the art' review, the book appears to be reasonably up to date, to judge from all but isolated references, with the literature to 1977. It would probably be unrealistic to expect any more recent 'cut off' date for a book as substantial as this, though it means that readers should be prepared to look for later (mainly journal) literature in supplementation. Another direction in which accounting and finance readers would be advised to seek supplementation is with respect to the social-psychological literature relating to industrial relations, and bargaining in particular, since the present text deliberately refers to the analytical and empirical work in line with that approach only incidentally.

In summary, this is a very good modern labour economics text which can be recommended to anyone seeking a reasonably comprehensive and concise reference to that field. I cannot see many readers of *Accounting and Business Research* wanting to buy it on an individual basis—amongst other things, its value as a 'statement of the art' is inevitably somewhat transient—but it is well worth recommending for institutional purchase, if your labour economist colleagues have not already done so.

University of Leeds K. T. Maunders

Managerial Economics. *Evan J. Douglas.* Prentice-Hall International, 1979. xv+505 pp. £13.85.

There is a real need for a relevant textbook in managerial economics which could be used by accounting students. Despite some novel material, this well written book does not fulfil this need. It may, however, be used as supplementary material within a management accounting course or within a conventional microeconomics course; for the professional or practising accountant it has little relevance.

In the preface, the author states that the book is concerned with the application of economic principles and methodologies to the decision-making process under conditions of uncertainty. The subtitle of the book, *Theory, Practice and Problems*, is misleading for the academic or practising accountant. The book's emphasis is almost entirely on the conventional price and output decisions (with a heavier emphasis on pricing). The book is essentially a microeconomics textbook covering demand, supply and theory of the firm. As such, it is beautifully presented, well thought out and pedagogically better than many of its rivals. As a book on managerial economics, I believe readers may be disappointed. The conventional microeconomics is concerned with a single product firm in a certain environment with smooth and continuous demand and cost functions (with quantity being the only exogenous variable). These circumstances are the major focus of the book, though there are some exceptions.

The book is split into five sections. Part I is an introduction, Part II deals with demand theory and analysis, Part III covers production and cost analysis, Part IV brings together the earlier parts of the book and provides an extensive treatment of 'Pricing Analysis and Decisions'. Part V examines a number of other topics from a managerial economics perspective: namely, linear programming analysis, advertising and promotional decisions and capital budgeting and investment decisions.

In Part I, the first chapter provides a methodological review and a crash course on calculus, analytical geometry and some concepts of elementary statistics. The second chapter provides a terse, but well written, analysis of decision making under conditions of certainty, risk (known probabilities), and uncertainty (no objective probability distributions). The treatment is entirely classical and neo-classical in its exposition.

Part II, entitled 'Demand Theory and Analysis', consists of three chapters. The first is a well written discussion of 'Consumer Theory' with a novel section on the recent development of product attribute theory. The second (Chapter 4) analyses the various elasticities associated with demand including the often neglected advertising and cross-advertising elasticities. The third chapter entitled 'Demand Estimation and Forecasting' deals with the often neglected area of trying to estimate demand relationships. Although it is refreshing to find this analysis explicitly brought into the main flow of the book, some would say the treatment was too simplistic (e.g. no discussion of autoregressive techniques).

Part III, entitled 'Production and Cost Analysis', also consists of three chapters which parallel those on demand in Part II. All the usual cost and production theory concepts are discussed. The second chapter (Chapter 7) is a particularly good exposition of accounting and economic costs concepts; for a traditional accountant or for an economist it brings realism and a number of important issues into focus—including an exceptionally interesting discussion of breakeven analysis. Chapter 8 deals with 'Cost Estimation and Forecasting' and the comments made for the parallel chapter on demand apply to this chapter.

Part III is entitled 'Pricing Analysis and Decisions' but covers a conventional treatment of theory of the firm in Chapter 9 ('A Review of Basic Pricing Theory') and new theories of the firm in Chapter 10 ('Advanced Topics in Pricing Theory'). To cover in two chapters what is normally dealt with in many more is no mean feat; however, it is successfully achieved and I would have no hesitation in letting my students loose on the chapters, given that they had covered the earlier chapters first. The next two chapters are novel. Chapter 11. ('Pricing Decisions for Established and New Products') deals with pricing in an environment of risk and uncertainty. The chapter discusses the requirement for static and dynamic optimality of mark-up pricing, as well as techniques such as price positioning, attribute pricing and product line price strategies, for established products. New product pricing includes price skimming, penetration pricing and pricing new products using expected present value analysis. Chapter 12 ('Competitive Bids and Price Quotes') integrates much of the earlier analysis of the book and uses many 'management accounting' techniques and analysis (but at an elementary level).

Part IV, entitled 'Topics in Managerial Economics', includes an elementary chapter on linear programming and a simplistic chapter on capital budgeting and investment decisions. A third chapter (Chapter 14) on 'Advertising and Promotional Decisions' is a relevant chapter on an often neglected subject. It is a pity that advertising is relegated to the end of the book.

The most likeable aspects of the book include: the modernity of the approach (remembering that it is being treated in this review as a microeconomics text), the attention given to empirically estimating demand and cost relationships, the treatment of costs in a management accounting framework and the chapter on advertising. Despite its length, the book is not long winded and efforts have been made to increase its readability.

Who will use it? My theory is that the focus of attention is too narrow for a managerial economics book. It is also too narrow for a conventional microeconomics course (there is nothing on welfare). The book could be used as a replacement textbook on a microeconomics course for accounting undergraduates, although linear programming and capital budgeting would need to be dealt with in greater length in other accounting/finance courses. The current price of £13.85 rules out this text as an essential purchase for students. For the accounting teacher, the book provides a refresher course on modern microeconomics and, as such, I recommend its purchase. Certain teachers of management accounting courses might seriously consider whether their libraries should acquire multiple copies for certain topics.

University of East Anglia K. N. Bhaskar

Added Value in External Financial Reporting. *Michael Renshall, Richard Allan and Keith Nicholson.* Institute of Chartered Accountants in England and Wales, 1979. pp. vi + 116. £5.95.

The Accounting Standards Committee's consultative document *The Corporate Report* recommended that company reports should include a Value Added Statement and this recommendation proved popular with the larger British companies. Value Added reporting practice has, however, been very diverse and the question arose of a possible accounting standard on VA. The ICAEW therefore commissioned this study to consider whether there should be a formal requirement for VA information in corporate reports and, if so, how this information should be calculated and presented. The three joint authors (they are all with Peat, Marwick, Mitchell & Co.) have done their job well and produced a book which will be useful to all accountants interested in the theory and practice of VA reporting.

The authors make much of the distinction between the two sections of present day Value Added Statements. The first section reports VA by deducting from the entity's sales revenue its purchases of materials and services from other entities, thereby arriving at the contribution of the reporting entity to the economy. The second section shows how the VA thus arrived at has been distributed amongst the entity's employees, capital-providers and the government. The authors point out that the first section can readily be combined with a conventional profit and loss account. The advantages of VA are claimed to be its comprehensibility, its stability and its suitability for comparison and the authors conclude that there is a strong case for standardising presentation. Ideally a group's profit and loss account would start thus:

Turnover		£xx
Less Materials and services (including depreciation)		xx
Net value added		xx
Less Employment costs of sales	£x	
Non-production costs *less* income	x	xx
Operating profit		xx

(thereafter the statement would deal with associated companies, tax, minorities, extraordinary items and dividends, to arrive at retentions—all this presented in the conventional way).

Renshall and his co-authors believe that the arguments for *net* VA (i.e. VA after deducting depreciation) outweigh those for *gross* VA but this belief, which is reflected in the above layout, meets an obstacle in the shape of the Fourth Directive. The format specified in the Directive does not permit the introduction of a separate sub-total for *net* VA since the compulsory order of presentation requires employment costs to be deducted before depreciation. This is an instance of the Continental preference for rigid formats stifling a new form of presentation which has considerable advantages.

Turning to the second, or distributive, section of the VA statement, the authors argue that this social accounting report articulates imperfectly with the conventional accounts because of non-trading items such as extraordinary items or investment income. An elaborate reconciliation is feasible but would degrade the simplicity which is a main advantage of VA information. Therefore it is concluded that a 'Statement of Distribution of Value Added' should be separated from the formal financial accounts, and may be included in a social accounting report by companies which wish to do so. At first sight one might think this proposal prevented readers of the corporate report from having easy access to the ratio of employment costs to VA; but the Fourth Directive requires the disclosure of employment costs in the body of the profit and loss account so the two components for this ratio would still be readily available.

Throughout the study the authors choose to reverse the term Value Added and write of Added Value, saying they prefer this usage on historical and grammatical grounds, though recognising that most companies, influenced no doubt by VAT, refer to VA. Grammatically they are on weak ground since terms such as 'account rendered', 'bills discounted', and 'cash received' have long been accepted. The attempt to reverse the prevailing word order, by introducing potential confusion, goes against a main advantage claimed for VA information—that it is more comprehensible to the financially uninitiated than a profit report.

The study includes a survey of the VA Statements issued by 57 major British companies in the year to 30th June, 1977. The authors list the 57 companies but do not explain how they chose their sample. Many extracts from these VA Statements are reproduced in an Appendix which would be very useful to any company accountant preparing a VA Statement for the first time.

The ASC now has the research reports it commissioned on the VA Statement and the way is open to reduce the great variety of reporting practice—an urgent task if VA information is to become as widely used for purposes of comparison as it deserves to be.

University of Aberdeen Michael F. Morley

The Future of the UK Motor Industry. *Krish Bhaskar, with a contribution by Garel Rhys.* Kogan Page, London, 1979. xi + 472 pp. £12·50.

There is bound to be widespread interest in the British motor industry at the present time. The future is uncertain and import penetration of the home market is increasing. Even Ford, perhaps the most successful of the British producers, is bringing in an increasing proportion of vehicles from its plants on the continent. A book that deals with all aspects of the industry is therefore to be welcomed.

It is inevitable that a book as far ranging in its treatment of the industry as this one should in some ways prove disappointing. The reader is bound to feel that some aspects of the subject are not treated as adequately as others. The problems facing the industry are so many and varied that no single author can be competent to deal with them all. In the present book, such topics as the extent of economies of scale, projections of future demand, the management structure of firms and so on are dealt with satisfactorily. The treatment of industrial relations, however, is less satisfactory. And it may well be industrial relations which are the key to whether a volume car industry survives in Britain.

It is also inevitable that there should have been significant developments since the book was written. The merger between Chrysler Europe and Peugeot-Citroën is no longer a proposal but an accomplished fact. The author argues that the British government's rescue of Chrysler UK was a cost-effective operation in terms of job saving. On the assumption that jobs were saved, this is perhaps true: there is no reason to suspect the author's arithmetic. But with the Peugeot takeover of Chrysler, the future of the UK operation was again in doubt, and subsequent events have not been reassuring. Redundancies at Linwood have been announced and there has even been talk of the closure of Linwood.

It is clear from this book that the future of the British volume car industry is very insecure. Economies of scale are important and Bhaskar estimates that the achievement of adequate scale economies calls for a total production by a firm of around a million cars a year, and a minimum output of around 200,000 for individual models and 300,000 for each engine type. With four firms established in Britain and a projected demand in 1980 of 1·5 to 1·7 million cars, the difficulties are only too obvious. Bhaskar sees the future of the three multinationals in integration. Some models will be imported from the continent whilst others are assembled in Britain and perhaps exported. An engine plant may supply assembly plants in several countries. Ford has already gone a long way along this road.

For BL this way out is impossible. Total capacity is around a million cars but actual production has not been within sight of the million mark since 1972. Alternative scenarios are considered, one with BL remaining in the volume car market and the other with it gradually withdrawing to a more limited, specialist producer role. Production under this scenario, however, could still be around 560,000 cars in 1990, far more than one would expect from a genuinely specialist operation.

The book also considers the position of the smaller specialist producers and of the commercial vehicle producers. Here the prospects are brighter. Economies of scale are less important for the specialist car producer and for the commercial vehicle producer, especially at the heavier end of the scale. In the lighter commercial field, competition is likely to increase, both from European producers and Japan, especially in the case of car-derived vans.

This book is not always well written, and there are errors, perhaps in proof reading, which occasionally leave the meaning in doubt. But it does contain a great deal of useful information. One may not always agree with the author's view of what is likely to happen but the book provides the material on which to form one's own view.

University of Dundee J. M. Jackson

Financial Ratio Analysis—An Historical Perspective. *James O. Horrigan* (ed.), Arno Press, 1978. $20.

This is an anthology of twenty-two articles, the earliest of which dates from 1919, selected from what the editor describes as the initial evolutionary phase of financial ratio analysis, stopping short of the current quantitative era. The book is divided into six sections: (1) overview of general history, (2) early proponents of financial ratio analysis, (3) early critics of financial ratios, (4) early empirical studies of financial ratios, (5) analysis of the problems and shortcomings of ratios, and (6) future thrusts: new ratios and systematic models (which seems a somewhat misleading caption for the two articles reproduced from 1956 and 1960 publications).

The most recent article in the collection is the editor's 'A Short History of Financial Ratio Analysis' which appeared in *The Accounting Review*, April 1968. More than eighty references to other papers are made in his article and, given such choice, it is unlikely that readers would agree on what should be included in an anthology of this kind. The editor seems to regard the dividing line between the evolutionary and quantitative phases as being marked by Beaver's well-known study entitled 'Financial Ratios as Predictors of Failure' (*Journal of Accounting Research*, 1966) which is referred to in his article but is omitted from the anthology.

Some readers of the anthology may be surprised to discover how little the art of interpreting financial accounting statements seems to have changed since the beginning of the century. Textbooks still occasionally refer to a working capital ratio of 2:1 as being desirable, yet this yardstick was used by credit analysts more than 70 years ago. Similarly, the advice 'individual ratios mean little in themselves, must always be referred to adequate standards, and at best are nothing more than a clue to conditions which may require investigation', although written by Paton in 1928, would be the type of observation one would expect to find in a modern book dealing with the subject.

The London School of Economics and Political Science — Susan Dev

The Accounting Framework: A Contemporary Emphasis. *Ronald Ma and Russell Mathews.* Longman Cheshire, 1979; xiv +732 pp. £7.95 [With *Students' Companion* (Ronald Ma, Russell Mathews, Nina Kingston and Raymond Pandey) 306 pp. £3.50, *Teacher's Manual* (same authors) 258 pp.].

The Accounting Framework is a textbook that has undergone two metamorphoses since its first appearance in 1962. Originally published by Cheshire Australia as *Accounting for Economists* under the sole authorship of Russell Mathews, it became *The Accounting Framework* in the revised edition of 1971. In the 1979 edition it now has Ronald Ma as co-author and has aquired the subtitle *A Contemporary Emphasis*—as well as the appendages of a Students' Companion and a Teacher's Manual.

Those of us who used the original text in our introductory courses in the sixties held it in high regard, but the no less worthy 1971 edition suffered in the UK from a price of some £13 and difficulties in obtaining supplies from the Australian publishers. Such problems do not encumber the latest version—£7.95 is an unexceptional price for a heavyweight paperback text and the Longman Cheshire publishing merger has taken care of the distribution aspect.

In their preface the authors suggest (justifiably) that their book 'is not restricted to an account of settled doctrine and established procedures... [but]... rather it adopts a questioning approach to orthodoxy'. In order to implement this praiseworthy aim in an introductory book the questioning must either be restricted to a level the novice can understand or the arguments must range over several levels and produce a multilevel text. The authors have deliberately chosen the second alternative, with results which they acknowledge to be 'somewhat encyclopaedic', but they say:

> The intention has been not to provide a text for a single course in accounting, but rather to develop a compendium of structural studies that may be used as a continuing source of reference by students of accounting in both introductory and advanced courses. This approach has its problems and, because the degree of difficulty differs from chapter to chapter (and in some cases within individual chapters), the book must be used selectively.

However, the division of the book into four parts does permit a broad distinction between levels of difficulty. Parts I and II 'are designed to provide an introductory course in accounting' while Parts III and IV 'may be read by first-year students with understanding and benefit... [but are]... intended primarily for advanced students'.

Part I is mainly concerned with introducing financial accounting in the historical record context. Double entry and recording processes are tackled straightaway in the first two chapters, followed by three chapters on the profit and loss statement, balance sheet and funds statement. Then an entirely new chapter on 'assumptions, qualitative criteria and standards in historical record accounting' fills a gap in earlier editions by examining objectives and problems of measurement. There follows a chapter on analysis of financial reports, which ranges widely to include such issues as leverage, cash budgets and W. H. Beaver's work on financial ratios as predictors of failure. The last two chapters of Part I introduce information systems and data processing alternatives, extending into issues of system design with the aid of flowcharts.

Part II focuses on entities: partnerships, companies, company combinations, departments and branches, public authorities and even national economic accounts are featured. The inclusion of national accounts certainly makes for comprehensive coverage, although accounting teachers with a crowded syllabus may prefer their students to study such material as part of economics—where construction and use can be more effectively combined. But the chapter on public authorities is sufficiently 'micro' to qualify for most accounting courses, and provides a welcome antidote to the conventional view of accounting as a preserve of private sector profit seekers. In the entity chapters there are understandably more Australian institutional examples than American or British, but this should deter only the xenophobic.

The controversial area of accounting measurement and valuation is the subject of Part III. A chapter on economic income and discounted cash flow is followed by five chapters on different accounting valuation systems and a closing survey chapter on developments and future trends. It would be impossible to satisfy all protagonists in this field, but the high quality of these chapters fulfils the reader's expectations of the authors—one of whom, of course, headed the Australian government's *Inquiry into Inflation and Taxation.* The survey chapter must be the finest succinct review of the international state of play which is available in some 15 pages. Like their subject matter, these chapters have changed and grown considerably since the 1971 edition; whereas the earlier edition could serve to introduce alternative valuation systems at first year level, the new material is generally too concentrated for even the most able novice. The best use for this part of the book might be as a contribution to the reading for a course on income measurement and valuation at, say, second-year level.

The final part of the book is devoted to cost accounting and management decision making. These chapter range widely over cost concepts, costing systems, cost accumulation and standard costs, strategic and long range tactical planning, profit planning using such approaches as break-even analysis and graphical linear programming solutions, capital budgeting, and differential cost and business decisions. It is a considerable achievement to encompass such a variety of issues intelligibly in some 150 pages and it is here that the authors' warning that 'the book must be used selectively' is particularly apposite. A sizeable proportion of this material could be used in an introductory overview course that included management accounting but these chapters also cover some topics like corporate modelling that most introductory courses would leave for deeper study at a later stage.

The text has an excellent selection of discussion problems and exercises at the end of each chapter, and the *Students' Companion* provides a further range of exercises. The *Teachers' Manual* gives figure solutions to selected exercises from the main text and to additional exercises from the *Students' Companion.* The exercises are pitched predominantly at a level that might be tackled in a first course in accounting, although the spread is greater than could be accommodated in the time available for most courses—which merely leaves choice to the teacher.

Overall the book and accompanying manuals provide very valuable reading and teaching materials, and the only reservation that needs to be made is that a closer focus on the introductory level in the text could have provided an even more effective teaching vehicle. Undoubtedly *The Accounting Framework* deserves consideration by anyone teaching accounting at introductory or intermediate levels.

University of Bristol Don Egginton

Relevant Financial Statements. *Joshua Ronen and George Sorter.* Arno Press, 1978. $20.

Some find reassurance in the familiar; others would argue that it tends to be boring. Readers will therefore react differently to many of the fourteen papers in this collection written individually, jointly, or in collaboration with others, by George Sorter and Joshua Ronen. It is not just that nine papers are reprinted from *Objectives of Financial Statements, volume 2,* and that of the other five only three are previously unpublished; nor is it simply that, being a collection of discrete papers on a general theme rather than a monograph, there is considerable repetition of ideas from one paper to another. It is rather that few readers are likely to disagree with, or find much very new in, many of the general propositions put forward—broadly that choice among accounting alternatives requires specification of the objectives of accounting, that more information should be disclosed, and that if accounting is to be used to aid economic decision-making that information should be such as to enable prediction of the magnitude of and risk associated with future cash flows.

But to be fair, the book is a volume in the splendid series 'The Development of Contemporary Accounting Thought', and as a record of the authors' contribution to a continuing debate over the last decade it contains some useful articles to which postgraduates or bright undergraduates might be referred. It also serves as a nicely bound (if unpaginated) testimony to the backwardness of twentieth century accountants; future historians will almost certainly be incredulous that accounting thought had so little developed that it was thought necessary in the 1970s to write papers urging specification of the fundamental objectives of accounting.

The papers fall into three broad categories—the need for objectives, the general framework for determining and meeting these objectives, and specific proposals for relevant accounting statements. It is not possible here to do more than try to give the flavour of some of the articles.

Discussion of the need for objectives is given a slightly different twist in one paper by setting the discussion in the context of the efficient markets hypothesis. It is argued that the existence of efficient capital markets does not obviate the need for specifying independently the objectives of accounting as a basis for evaluating accounting alternatives; one cannot rely simply on testing market price reactions to alternative systems in order to evaluate those alternatives since 'the manifestation of a present equilibrium which may be undesirable cannot be used as a normative criterion for choosing the accounting alternative which best satisfies an objective'. The same paper discusses the impact of existing disclosure laws on the incentive to produce relevant information and concludes with the paradox that 'additional regulation ... seems warranted to nullify the adverse effect that the present laws may have'. There follows a short paper entitled 'Accounting Alternatives and Social Choice' which reminds us that choice among alternatives may have consequences affecting non-users as well as users of accounting information through its impact upon social welfare, and discusses what this implies for the accountant's regulatory role.

The general framework begins with 'An "Events" Approach to Basic Accounting Theory', calling for disaggregated information about relevant economic events that can be used to generate various input values for individuals' own decision models, rather than merely single figures for income and capital values which ignore the existence of many different models requiring different inputs. The answer, it is suggested, lies in multicolumn reporting, and subsequent papers call for distinctions to be made between economic and accounting income and encourage moving away from the idea that there should be simple articulation between the balance sheet and income statement. The emphasis in financial statements should be on providing information useful for 'evaluating, estimating, comparing and controlling the amount, timing and uncertainty of the sacrifices and benefits of an organisation'.

In their specific proposals—the bulk of which are contained in 'Relevant Accounting' first published in 1972—they propose three interlocking reporting systems using a number of new statements reflecting both past transactions and expected events. The balance sheet in particular should contain historic costs, exit values (including the exit value of equity, measured as its market value, presumably at the balance sheet date) and economic values based on future cash flows discounted at a market rate so as to give the 'market-risk-determined (MRD) value' of the firm. Comparison of the MRD value with the exit value of net assets is said to give some measure of the risk associated with future operations (though, one may think, a very rough and ready measure), while comparison between the MRD value and the exit value of equity is said to reflect the higher risk that the market attributes to cash flows over and above the normal market risk, or the extent to which it doubts the estimates of these cash flows. Unless I missed a link in the argument I remain unclear about the usefulness of this comparison, since the information in the statements is itself presumably intended to affect the exit value of equity. The authors include a test of the feasibility of preparing DCF statements—not entirely convincing since the cash flows are projected for only three years—and in some previously unpublished papers call for disaggregation of historical cost accounts into price and quantity dimensions to deal with the impact of inflation. They are perfunctory in their dismissal of many suggested systems, particularly CPP.

Although the authors stress that different individuals may use different decision models, they adopt a normative approach throughout—inevitably, perhaps, given the present state of the art. Also they emphasise only decision-making objectives; other users may, however, require information for quasi-legal or contractual purposes, but little direct recognition is given to their needs (although, of course, in any contractual situation it is possible to specify precisely the rules that shall apply). Nonetheless, like other volumes in this series, the book might be a useful addition to the reference library, if not one that many people could afford for themselves.

The London School of Economics and Political Science
Christopher Noke

Inter-Regional Input-Output Tables for Wales and the Rest of the UK, 1968. *Richard Ireson and Cyril Tomkins.* Welsh Council, 1978. xv + 94 pp + tables.

This publication is part of an excellent series of studies of the Social Accounts of Wales. The Welsh Council deserves congratulations for its sponsorship of this series, which has made a major contribution not only to our knowledge of the Welsh economy but also to the methodology of constructing social accounts for regions of the UK.

The title conveys a clear description of the subject-matter of this work. There are three ways of constructing input-output tables for an economy. First, one can try to compute a table entirely from evidence collected and published for other purposes, e.g. in the UK Census of Production. Secondly, one can try to gather the base data of flows of input and output entirely directly by persuading firms to complete special questionnaires—as, for example, in the construction of the recent input-output table for Scotland. Third, one can adopt some mix of the first two approaches. The first method has the advantage of cheapness, since the data are already collected, but since the information is always more or less incomplete critical assumptions are required to fill the gaps. For example, published Census of Production data tell us in at least some key cases about what output is made in a region, but not about where it was sold, and not about where the inputs came from, so assumptions are needed about the extent to which goods that *could* have been sold, and purchased from, within the region in fact stay in the region. So although it is possible to draw quite useful conclusions from input-output tables constructed by the first method, the results at least require some independent cross-check to establish how far those assumptions are justified. The only way rigorously to conduct such a cross-check is to construct an input-output table by the second method, but that involves considerable expenditure of time and money to distribute questionnaires to firms and process the data, and relies for its success on the willingness of firms to co-operate in the study. The third method, which is essentially a compromise, involves the use of published statistics with some support from questionnaire results.

Prior to the series of works sponsored by the Welsh Council, there was a set of major studies of the Welsh economy edited by Professor Edward Nevin, one of which, by Nevin, Roe and Round, was published in 1966 under the title *The Structure of the Welsh Economy* (University of Wales Press). This study contained an input-output table for Wales for 1960, constructed largely by manipulation of published statistics. Part of a similar exercise for 1963 was conducted by Dr T. T. Jones in his unpublished PhD thesis (*Regional Multipliers and the Location of Industry*, University of Dundee, 1974). Mr Ireson and Professor Tomkins have completed a much more ambitious study, combining published data with the results of a questionnaire designed to gather the necessary information about inter-regional trade between Wales and the rest of the UK. For this survey, large firms were covered by questionnaire followed by interview, and a sample of smaller firms by postal questionnaire and follow-up telephone calls. The response rate in the manufacturing industries was between 10 and 100%: the very high returns mainly represented nationalised industries or industries in which there were a few large firms. The coverage was quite satisfactory in most of the industries which are thought to be important to the Welsh economy, but the authors properly stress that some of their conclusions even for manufacturing, and even more for some service industries, must be interpreted with caution.

The major effort represented in this study is that in arriving at the input-output results themselves and at the pictures they present of the Welsh economy in 1968. Publication of this study was delayed for reasons outwith the control of its authors, but the value to anything other than a very specialised market of publishing such a detailed study of a regional economy some ten years after the date to which it applies must be questioned. There are, in the opinion of this reviewer, two features which make this study of interest to a varied readership even after this delay. First, the text contains a very lucid account of the procedures used in constructing the input-output tables, and as such is a useful manual for future work for any region of the UK. In the coherence of their discussion of the techniques and the problems, Mr Ireson and Professor Tompkins have prepared what could be a useful text for undergraduates seeking to understand input-output analysis. Second, this new table for Wales for 1968 does not stand alone. There is the earlier study for 1960, albeit on a different basis. There are the social accounts for Wales prepared by the Central Statistical Office (and published in *Economic Trends*). There is therefore enough of a time pattern for it to be realistic to envisage that the study under review could be updated to give useful results for contemporary Wales.

University of Dundee Charlotte M. Lythe

Proposed Funds Statements for Managers and Investors. *Harold E. Arnett.* National Association of Accountants, 1979. ix + 139 pp.

Beyond the principle that it should account for some or all of the differences between successive balance sheets, little is agreed among advocates of the funds statement about its function, coverage or contents. Professor Arnett's monograph advances the case for a funds statement reflecting the growth of the organisation. The tenor of his writing sometimes implies that his case is rigorously argued and defensible against competing alternatives, but in fact his arguments, though interesting, have to be taken at a rather more pragmatic level, and adherents of other schools are unlikely to find them persuasive.

Much the least satisfactory part of Professor Arnett's study is, indeed, its 'basic philosophy' (p. 10) which is founded on the view that 'the best system ever devised for the utilisation and distribution of scarce resources is the free enterprise system' (p. 11). This proposition, which, for Professor Arnett, is 'not a debateable issue' (p. 11) derives from the virtues of consumer sovereignty: 'only if consumers control and direct can the distribution of scarce resources be accomplished in the most fair and equitable manner. This follows from the nature of the consumer group. It is the only one made up of all races, colours, and creeds; all economic levels; all philosophies, attitudes and emotions. Its influence results from a one-person, one-vote reaction to the market' (p. 11). Professor Arnett is, of course, perfectly entitled to voice his support for free enterprise, although his defence of it would surely startle even the most passionate apostle of laissez-faire. What is worrying is his conclusion that 'preserving and strengthening [free enterprise] should be a basic consideration in accounting when analysing problems and developing recommendations and suggestions for their solution' (p.12). To Professor Arnett, this apparently represents the removal of accounting from the political arena, but to others it may look like the wholesale abandonment of political neutrality, a development which is likely to be unpalatable—and unprofitable—for many accountants.

Fortunately the rest of Professor Arnett's study is only very loosely coupled to his basic philosophy. Managers, he argues, are concerned with the overall interests of the firm and hence statements which they find useful will also be of use to all other *bona fide* interest groups. Managers wish to make comparisons between their own organisations and others and hence statements should be comparable. Managers are interested in financial position, growth and income. Broadly speaking, the balance sheet shows the first and the income statement the last of these, and hence the funds statement should be used 'to reflect the expansion or contraction (growth) patterns of a firm and to indicate how such growth activities are being financed' (p. 31). It is difficult to see how this chain of argument could be used to defend a growth-based statement against someone who, whilst accepting Professor Arnett's basic philosophy, nonetheless advocated, say, a cash-flow concept of funds or a statement balance reflecting gross turnover of funds, using alternative intermediate arguments. In view of the limitations of data-expansion, a comparison of the merits of the various models would be useful, although Professor Arnett cannot be blamed for failing to provide what he does not set out to provide. On the other hand, his model will be of interest to groups other than those committed to the resurrection of laissez-faire economics.

Professor Arnett follows Mautz in urging the need for a statement reflecting enterprise growth, but whereas Mautz recommended a new statement in addition to the traditional funds statement, Professor Arnett's statement would supplant the traditional version. It would be liberated from the other major statements, existing in its own right rather than as a supplement to the others. The two sections of the statement would show separately changes in sources of capital and capital employed in net terms (though with gross totals inset) so that the balance of the statement would reflect net growth in funds. The section of the statement recording 'methods of financing growth activities' is classified according to the sources of financing. The shareholders' section begins with operating cash flows and is then adjusted to a working capital basis in order to distinguish between cash and non-cash sources. Other sources are shown on a working capital basis. The other section of the statement is headed 'growth activities' and records the expansion of investment in assets. The interpretation of a statement in these terms requires some care. For example, depreciation is left out of account; this is entirely proper in a traditional funds statement, but might be misleading in Professor Arnett's statement which includes as a 'growth activity' the 'net increase in book value of plant, property and equipment'. This is net of the book value of fixed assets disposed of, but not, of course, of depreciation for the year, which might well be thought of as a restriction of growth activity.

Professor Arnett makes a number of detailed proposals, and goes on to provide an extended example of a statement drawn up along the lines he recommends, and to discuss the interpretation of such statements, principally using ratio analysis. He also discusses the use of a variety of funds statements for internal management purposes.

University of Kent at Canterbury B. A. Rutherford

Financial Reporting and Business Liquidity. *M. Backer and M. L. Gosman.* National Association of Accountants, 1978. 307 pp. $10.95.

In the 1970s many business organisations experienced liquidity problems, largely as a result of the direct and indirect effects of comparatively high rates of inflation. In these circumstances it is not surprising that external analysts have been searching for more effective methods of predicting liquidity problems. It is debatable, however, whether traditional financial statements contain sufficient data to alert the public to possible corporate illiquidity and, even if the material provided is of some value, it is by no means clear as to how credit grantors use published financial information. A detailed study of this subject must therefore be welcome, although we cannot really be sure how far the results of an exclusively American research project apply to other developed countries.

In the early part of this book the authors provide some very useful background information concerning US liquidity trends in the manufacturing sector over the 1947–75 period. Seven short-term liquidity ratios were selected for investigation and these all showed a significant deterioration, apart from the inventory turnover ratio. For example, the current ratio has gone down from 2·67 to 2·02 and the quick asset ratio from 0·83 to 0·31. The decline in the current ratio should not surprise UK readers—comparable figures would probably show a fall from about 2·5 to 1·5—although the suggested level of the quick asset ratio is extremely surprising. Further investigation revealed, however, that receivables (as well as inventories) had been omitted from the current assets figure. This was presumably an error in extracting figures from government data, as the usually accepted definition of the quick asset ratio (cash, marketable securities and receivables compared with current liabilities) is provided on page 38.

The changes in the turnover figures for inventories and receivables are shown over a similar time period. The turnover of inventories has not changed very significantly—from 5·74 in 1947 to 5·86 in 1975—although comparisons are difficult to make in this case because of the greatly increased use of the LIFO valuation method. The receivables turnover figure has, however, changed from 12·23 (30 days) to 7·61 (48 days). The latter figure is still one of the fastest settlement periods in the developed world, although one must not forget the offsetting influence of earlier payments to creditors.

Long-term liquidity ratios have also changed very significantly. The debt to equity ratio for all manufacturing corporations has increased from 21% in 1955 to 42% in 1975 (debt includes short-term bank loans plus all funded debt). As might be expected in these circumstances, interest coverage has declined very significantly from 14·11 in 1955 to 3·82 in 1972 (more recent figures are not provided).

These remarkable changes over a period of about 20 years can be viewed in a variety of ways. The optimist might suggest that the figures probably indicate increased efficiency in that business organisations are now able to survive with much smaller monetary resources, presumably because of better budgeting and planning techniques. On the other hand, there now seems to be little doubt that a much greater number of firms are closer to bankruptcy than in previous decades. Not surprisingly this decline in liquidity has been accompanied by a large increase in the number and size of business failures. For example in 1975 the number of bankruptcy petitions rose to an all-time high and in 1974 there was an unprecedented number of 427 bankruptcies in the million-dollar category.

In these circumstances it is obviously desirable that more information should be made available regarding the way in which providers of credit make their credit-granting decisions. Credit is, however, provided in a variety of ways, e.g., trade credit, bank loans, long-term loan stock etc. Interviews were therefore arranged with credit agencies, banks, insurance companies, bond rating agencies and other interested organisations. The results, as one might expect, were not very conclusive, mainly because the credit-granting organisations were reluctant to discuss in any detail the criteria that they use in making credit decisions. Nevertheless a number of important points emerge.

Firstly, the persons interviewed were asked to indicate how important financial ratios were in the credit evaluation process. The overall feeling seemed to be that ratios were of 'moderate to strong importance'. Additional considerations included 'quality of management, future for product, and general economic conditions'.

As far as ratios were concerned there was, as one might expect, some conflict concerning the most important ratios for credit rating purposes. A comparison of the ratios stressed during the interviews and empirical evidence based on recently failed companies indicated that in the case of long-term bonds the two most important ratios were cash flow to long-term debt and long-term debt to total capitalisation. In banks three major ratios were revealed—cash flow to current liabilities, return on sales, and total liabilities to tangible net worth. In the trade credit sector there appeared to be significant differences between the interview findings and the empirical results. Credit grantors 'seemed to be more concerned with comparing the present ratio levels for a given firm with past levels for that same company as opposed to merely contrasting the present levels with benchmark levels'.

In general, therefore, this survey seems to support those analysts who suggest that in an examination of liquidity we should be more concerned with dynamic ratios such as the relationship of cash flow to long-term debt or total liabilities rather than the traditional (but rather static) current and quick asset ratios. What was surprising, however, was the fact that 'the various profitability and cash flow measures were equally stressed by trade credit, bank loan and bond raters'. Liquidity analysis has always played an important part in the short-term credit decision but it was not considered to be so important in long-term decisions. This survey stresses, however, that 'liquidity analysis plays a significant part in security analysts' evaluation of companies'.

If there is to be an increasing emphasis on cash flow in financial statements, additional information should probably be provided in the annual report. The majority of interviewees in this study expressed an interest in the aging of receivables, inventory categories and age, replacement costs, contingent liabilities, cash flow projections, and the effect on income of disparate accounting methods. To many academics the cash flow projection would be the most important item on this list, although there is strong opposition in the business sector towards the disclosure of this information. Nevertheless it seems inevitable that there will be increasing pressure for this type of information to be provided, although the relevant figures may not be made available to all interested parties; for example, banks frequently ask for cash forecasts when loan applications are made.

As we enter the 1980s it seems inevitable that high rates of inflation will produce a situation in which a greatly increased emphasis will be placed on liquidity analysis. The key question in the survey may therefore be the one which asks—'Do you believe that the public should be alerted to illiquid situations (assuming development of criteria)?' In general there seemed to be a reluctance amongst the interviewees to compel accountants or organisations such as the SEC to pronounce on probable illiquidity. This will probably be one of the major problems that accountants in their role as auditors will have to face in the 1980s, together with many other external agencies.

This is therefore an extremely valuable book which should be read by all those accountants who are concerned with the liquidity aspects of financial reporting. The book will not answer all questions, but it should at the very least provide a 'think-tank' from which interested parties should be able to improve their liquidity analysis techniques for the problems that lie ahead in the 1980s.

University of Exeter P. R. A. Kirkman

Essays in Honor of William A. Paton: Pioneer Accounting Theorist. *Edited by Stephen A. Zeff, Joel Demski and Nicholas Dopuch.* Division of Research, Graduate School of Business Administration, The University of Michigan, 1979. xiii + 217 pp. $10.

The concept of a *Festschrift* of special essays to honour William A. Paton, senior statesman of

American accounting academe, is a welcome development. The essays and their authors are: 'Greer on Paton', Howard C. Greer; 'Observations on Internal Controls', Carl T. Devine; 'The Politicization of Accounting', David Solomons; 'The Feasibility and Desirability of Accounting Standards', Harold Bierman, Jr.; 'Accounting for Investments in Debt Securities', Maurice Moonitz; 'The Hard Core of Accounting', R. J. Chambers; 'Paton on the Effects of Changing Prices on Accounting', Stephen A. Zeff; 'Relationships among Income Measurements', Norton M. Bedford; 'Cost Accounting Principles for External Reporting: A Conceptual Framework', Gordon Shillinglaw; 'Social Performance Accounting: An Unheeded Challenge', R. Lee Brummet; Bibliography of Paton's Writings.

The works represent a blend of familiar and novel themes by nine prominent writers preceded by Howard Greer's brief commentary about the personality and personage of 'Bill' Paton.

A review of such a volume is not, in my judgment, the place to set out lengthy arguments for or against the views espoused by the main contributors. Rather I will use the review to highlight and briefly comment on what are signal features of the volume, its familiar and its unique essays and their usefulness to thoughtful academics, students and practitioners.

A number of the essays are adaptations, revisions or expanded versions of the themes for which the authors are already wellknown. The essays of Devine (which focuses on behavioralism and internal controls), Bierman (on a view of theory for accounting standards) and Zeff (Paton on changing prices) introduce new and/or very useful items for contemplation.

Solomons and Chambers provide expanded and refined statements of their views as to accounting neutrality via mapping (Solomons) and the use of dated monetary equivalents of assets and equities (Chambers). Bedford's essay, building upon established views on income, posits 'that it is far more important for accountants to investigate the relation between income measures than to determine which income measure is right...'

Students who have struggled with the conceptual literature of 'cost accounting principles' will appreciate the direction and content of Shillinglaw's essay as it pertains to the evaluation of the Cost Accounting Standards Board (CASB) and CASB's standards. Shillinglaw's system rests somewhat on the 'imputability principle' of cost assignment, which warrants the need for contracting parties to negotiate the basis of cost allocation in the face of joint product situations.

Moonitz's essay deals with accounting for investments in debt securities. It is related to AICPA Research Monograph No. 2 (1976) and details the aspects of an argument that, if historical cost and realised transaction exchanges are to be the basis of accounting for debt securities investments, then inclusion of unrealised elements (those recognised as induced by market value shifts) are not appropriate account balance items for financial statements.

Brummet argues for the expansion of accounting's role to the realm beyond traditional stewardship reports and into social performance accounting. His essay has futuristic appeal and there is polished strength in his argument.

The volume is concluded by a bibliography of the known original versions of Paton's works in book and article form. As well, book reviews, correspondence, governmental documents and several other items are included in this list.

The essays are a positive contribution to the literature and would be most useful to students seeking to study leading ideas on a variety of important contemporary issues. The editors are to be commended for presenting a balanced, relatively error free, volume. (It just goes to show that something good can come out of a Chicago Cubs baseball game.)

Case Western Reserve University — Gary John Previts

Nationalised Industries' Accounting Policies. *M. Gibbs and B. Tailor.* Consumers' Association, 1979. 23 pp + 12 appendices. £15.

This report, prepared on behalf of the Consumers' Association, presents the results of an inquiry into the extent to which the annual accounts of the nationalised industries in the UK provide a truthful and informative picture of their economic performance. In particular, concentration focuses on the inflation accounting information provided.

The main finding which emerges is that comparisons between the industries and against their financial targets are difficult to make owing to the different ways of presenting information adopted by each industry.

After beginning with a section on the form of the Industries' accounts, auditors' reports are examined. It is noted that in five cases out of eight these are qualified, although not seriously in most cases. It is encouraging though that both historic cost and supplementary information is being audited. In the following parts the adjustments made to improve the comparability of accounts are outlined. Data are presented on the CCA profit and loss account, with estimates of capital employed, return on capital, gearing adjustments, COSA and MWCA.

The current financial targets are then examined, followed by a brief section on changes in accounting policies. A very useful section of appendices summarises in some detail the adjusted and unadjusted profit and loss account and balance sheet for each industry.

The study is clearly set out and is well written. The tables are readily comprehensible and annotated. It provides a balanced assessment of Nationalised Industry accounting policies, as far as it goes. But there are a number of areas where it might have been strengthened.

Firstly, in relation to the data, the authors are honest in admitting that their adjustments are crude and arbitrary. However, if there is interest in the reliability of nationalised industry accounts then besides comparability accuracy is also important. If there are eight different presentations of the CCA information, it is reasonable to assume that there are eight different means of calculating the figures. Adjusting the figures with data provided by the industries themselves will not overcome this problem. Independently arrived at CCA adjustments, prepared on a consistent basis, are required. The authors do not appear to have done this to any great extent. It is not suggested that the task would be easy, but it could have strengthened their case. In addition it might have provided an insight into how thoroughly audits are being carried out. Given the importance of inflation adjustments, the wide room for manoeuvre in their calculation, and the hint that some auditors are not too happy with some of the methods of calculation, this would have been an interesting line to follow.

Comparable data from other sources, where available, might also have been shown. For example, the Price Commission report on gas prices and allied charges contains some replacement cost information. Notwithstanding the above, the authors deserve some credit for making available previously unpublished information relating to replacement cost returns on capital employed.

A second major criticism relates to the authors' discussion of the required basis for comparison, which is almost non-existent. An explicit discussion of what this should be is required. It is not enough just to state that a pre-interest return on capital employed is to be preferred. It is clear that they think adjustments should be approximately along the lines of those in ED24. But are these the most appropriate ones for measuring economic performance? The gearing adjustment is criticised, rightly. But it is excluded from the performance measure with the inadequate explanation that it is the simplest solution.

It is stated that the MWCA is extremely sensitive to the definition of MWC chosen (it might have been added, to the index chosen also). This being so, if economic performance is to be measured accurately there should be some attempt to discuss and define the most appropriate definition and index.

Attention concentrates on the financial results for the latest available financial year, with a brief review of inflation accounting adjustments made in previous years in which the industries are criticised for creating confusion by introducing this information on a piecemeal basis. However, the lack of unanimity in the accounting profession must bear some of the blame. Nevertheless, as a number of these *ad hoc* adjustments have been employed since 1970 (the Post Office replacement cost depreciation in fact dates from 1946/47) there is now, it seems, a deep-rooted distortion in the accounting information provided by many nationalised industries which causes problems for comparability within industries over time.

The authors conclude that it appears to be the more profitable industries which have taken the opportunity to reduce published profits, while the less profitable have sought ways to increase profits. (One might add the case of the National Freight Corporation, excluded from this study, which in 1972 sought to improve its results by discontinuing depreciation on freehold buildings and by shortening depreciation lives of vehicles.) But this raises the issue of attitudes towards the nationalised industries. As many press commentators and other interested parties criticise the nationalised industries whether they make profits or losses it is not surprising that this sort of thing happens. It would seem that in order to protect the consumers' interest, and indeed everybody's, a consistent and stable attitude towards the nationalised industries is needed, both by government and by the above parties. The use of financial targets should be part of a policy to encourage them to perform efficiently. But it would be wrong to turn round and criticise them when they do make a profit, as has happened in the past.

The call for standardising the presentation of annual accounts and for some standardisation of the form in which financial targets are set, made in this report, is a useful first step in the right direction. But all parties concerned must be clear about precisely what form this standardisation should take. This report should have taken more space to consider this issue.

University of Nottingham Mike Wright

Simplified Financial Statements. *A. E. Hammill.* Institute of Chartered Accountants in England and Wales. 106 pp. £4.95.

This booklet contains a report on a study undertaken for the Research Committee of The Institute of Chartered Accountants in England and Wales, with the initiative coming from the Accounting Standards Committee. In the existing climate of increasing legislation (and quasi-legislation) it is to be commended. If the remainder of this review seems a mite over-critical, do not take that as indicating the reviewer's belief that the work was not worth undertaking or that the booklet is not worth reading. They both are, for they could stimulate a movement that might revolutionise our financial reporting.

For example, the Union Européenne des Experts Comptables Economiques et Financiers (UEC) recently organised a seminar on the subject. This seminar used Mr Hammill's study as a basis for discussion; it proved a helpful stepping-off point, and led, *inter alia*, to conclusions that further research must be undertaken into the users of financial reports and their informational needs and that, in the meantime, experimentation with simplified financial statements is desirable. The participants in the seminar therefore endorsed two of the conclusions reached by the author of the present study.

The study is principally concerned with the annual reports to 'unsophisticated' shareholders of 'larger' organisations. It does, however, include the question of reports for employees—necessarily, because the remit to the researchers called for this. It is doubtful whether the two topics have sufficient in common to be considered together, and the remit was probably wrong in not confining itself to the former.

As a piece of research, there are some criticisms which can be levelled against *Simplified Financial Statements.* For example:

— the review of literature undertaken, the 'simplified' financial reports examined and the survey of 'interested persons', are not, in this reviewer's opinion, sufficiently extensive to enable valid conclusions to be drawn;

— the choice of interviewees (who in the majority of cases could not be described as 'unsophisticated' users) seems difficult to justify: it would have seemed more appropriate to produce a very simple model along the lines suggested below and test it on some real unsophisticated users;

— the efficient market hypothesis is not considered: it would surely have had some relevance.

However, any shortcomings are understandable. This reviewer knows from his own small involvement in the field that both time and finance can be limited, and accordingly it is not practicable to undertake the wide-ranging survey which is necessary. Accordingly, though the study reaches a number of conclusions, these are based to a large extent on 'hunch' rather than on hard evidence. Let us consider some of them.

The study speaks of simplified statements fulfilling a stewardship role but not being used for making decisions. This is perhaps a rather restrictive view of the decision-taking process: quite apart from prospective information, an investor needs, in order to take decisions, to form a view of how those who manage a company have met their responsibilities. The study also suggests elsewhere that simplified financial statements should not necessarily be 'for information only'. This seems to conflict with the view expressed relating to decision-making. Moreover the proposed simplified financial statement set out in the study includes certain information about the future: why, if purely stewardship?

It is difficult to accept the view of the study that a representation of complex economic activity itself has to be complex in order to be meaningful. Sometimes it is more meaningful to be simple than to be complex, even in complex situations.

The study suggests that the presentation of information should 'be largely dictated by the preparers' objectives in reporting the information'. What price neutrality?

The views expressed about audit reports need further justification or review. A report that simplified statements are prepared in accordance with appropriate accounting standards and are a fair extract of the full report could be just as helpful to the users as an unqualified report to the users of the full accounts.

There is a suggestion for a type of simplified report, which, in some respects is admirable. However, research undertaken by Professors Lee and Tweedie, the results of which were published in *The Private Shareholder and The Corporate Report* (ICAE&W, 1977) and are referred to in the present study, seems to indicate that a narrative presentation (such as the chairman's statement) is more acceptable than columns of figures. This is somewhat at odds with Mr Hammill's suggestion, which virtually favours financial statements as the core of the statement. The narrative parts of the proposal, with some key figures inserted, would probably be just as useful (but this is the sort of conclusion that one would have liked to have been able to confirm or deny as a result of the study).

One final point: when reading the study do not be misled by the use of the word 'consensus'. Here it mostly seems to indicate a majority view rather than general agreement, which is a more common interpretation.

Edinburgh P. N. McMonnies

Auditing Symposium IV. *Howard F. Stettler (Editor).* School of Business, University of Kansas, 1979. v + 133 pp. $6.00.

This book contains the proceedings of the 1978 Touche Ross/University of Kansas symposium on auditing problems and makes interesting reading, although it does contain a preponderance of articles of the 'where are we now, how did we get here or where are we going?' variety. It consists of eight papers and six discussants' responses.

D. R. Carmichael of the AICPA asks whether the accounting profession has lost control of its destiny. He concludes that the accounting profession shares its status with the courts, the SEC, Congress, and the undercurrent of consumerism in society in three key areas (the legal liability of auditors, and authority to set standards and the extent of federal regulation of the profession). This is not a startling conclusion but nevertheless as a review of the present political/accounting situation in the USA it is worth reading.

One of the issues raised by Carmichael is addressed by Richard H. Murray, who examines the problem of the auditor's liability. He considers, and many will sympathise, that the auditor's liability in the USA has gone too far. Right at the end of his paper he makes three suggestions as to the principles which should govern the auditor's liability:

1. An auditor can be held liable to his client for negligence, but should be liable to others (such as the investing public) only when guilty of criminal participation in that client's fraud or of a knowing failure to exercise its professional responsibilities.
2. The profession's own standards of conduct should be recognised as adequate defences of charges of malpractice.
3. In order to recover damages from accountants, plaintiffs should be required to establish a clear line between their losses and the misrepresentations alleged.

Perhaps these proposals might be regarded as being too favourable to the profession but there can be no doubt that the profession should spend time pinpointing what it feels the principles governing audit liability should be and campaigning for their adoption.

Robert E. Hamilton, in an article entitled 'The Role of Auditing Theory in Education and Practice', has ambitious ideas as to what a future theory of auditing should be capable of doing. His ideas are so futuristic that R. K. Mautz, adopting the style of Professor Hamilton's paper, describes them as being discountable to near zero in terms of today's needs! Professor Hamilton's paper does have its lucid intervals when pointing to some of the deficiencies of present audit theory. It is totally unconvincing when making suggestions on how those deficiencies might be overcome.

Professor Hamilton asks, for example, how auditing theory helps one make decisions about the use of compliance and substantive tests. Do sufficiently unambiguous definitions exist to permit an observer to categorise audit tests into these two types? Does it matter anyway? These are valid questions which have exercised those responsible for developing auditing standards. So far so good, but what of Professor Hamilton's solution? It appears that standard (economic) analysis would lead to a simple view of the production possibilities set and explain why the tests should be made in a certain way!

Rodney J. Anderson has done much excellent work in developing an analytical but practical approach to auditing. In his paper he traces the history of 'analytical auditing' from its beginnings in 1960 to the present day. This is an interesting paper but, as the discussant of the paper suggests, there is little to distinguish today's analytical auditing from today's conventional auditing. We are all analytical auditors now, at least in spirit if not in the detail of Rod Anderson's procedures.

Whither internal auditing is the subject of a paper by Victor Z. Brink. Again it is of the 'where have we been and where are we going?' variety. I found the discussant's response by Lawrence B. Sayer to be more interesting than the paper itself. Internal auditors are anxious to establish their credibility as an independent profession and Lawrence Sayer clearly regards internal auditing as a unique discipline. However, I suggest that the important thing is to establish auditing, both internal and external, as a unique and distinct skill separate from accounting rather than to focus on internal auditing alone.

While some philosophise, others get on with the job! By far the most important paper for the practising auditor is by Horton L. Sorkin and concerns the value of debtors confirmations. This raises serious doubts as to the efficacy of current methods for circularising debtors and suggests an interesting new possibility—the extended field circular. The kind of insight on the value of different audit evidence provided by experiments such as those conducted by Sorkin is invaluable.

In a further paper concerned with audit evidence William L. Felix Jr. suggests a negative behavioural effect of statistical sampling in that it focuses the auditor's attention on the sampling risk at the expense of proper consideration of non-sampling risk such as the risk of obtaining inadequate evidence to substantiate individual items in the sample. This is an interesting and quite probably correct hypothesis but unfortunately Professor Felix does not offer any real empirical evidence in its support.

The SEC's contribution is somewhat unimpressive especially since one of their contributors did not submit his typed record in time for its inclusion in the book! Nevertheless the book provides a readable and interesting collection of papers.

Edinburgh D. Hatherly

Contemporary Financial Reporting: a Casebook. *Wilson D. A., Shank J. and Frolin D.* Prentice-Hall, Englewood Cliffs, NJ, 1979. x + 385 pp. $10.95.

The authors suggest that the 'volume and velocity of changes in and modifications to those accounting principles which are accorded the status of "generally accepted"... demand the development of alternative pedagogical modes to the conventional accounting curriculum'. They put forward the use of case material as one alternative pedagogical mode which may meet the problems which they perceive in teaching financial accounting in an environment of such dramatic change. In essence, they justify their text as locating and bringing together good case material which might be used either alone or in conjunction with more conventional accounting texts.

The authors' purposes are reflected in the manner in which the text is organised. The topics treated follow a fairly conventional organisation in which Part I treats the problem of revenue recognition by means of 7 cases; Part II examines different aspects of the problem of asset valuation and groups 13 cases under the headings of inventories, fixed assets, intercorporate investments and intangible assets; Part III is addressed to liability recognition and refers to 18 cases focussing respectively on current liabilities, pension costs, leases, interperiod tax allocation and long-term debt; Part IV deals with issues in corporate financial reporting and refers to 11 cases concerning earnings per share, interim earnings, foreign currency translation accounting for inflation and the institutional framework.

Teachers of accounting will be interested in having to hand a text which has selected interesting cases and brought them together for use on courses treating the problems of financial accounting. The authors do not state the level of courses for which the text could be used. Herein lies one problem associated with the case approach, namely, the demands which the case approach itself makes upon the student in respect of knowledge of the current problems in financial reporting. Whilst some of the cases might well be usable on undergraduate courses in financial accounting, it may be difficult for many students who do rely on conventional financial accounting textbooks to treat several of the cases in the text. Indeed, as regards conventional accounting degree courses in British and Commonwealth Universities, several cases pose extremely complex problems in respect of which an acute understanding of the current issues in financial reporting would be an *a priori* requirement. In this sense, the authors' claim that the case book could be used either alone or in conjunction with a more conventional accounting textbook may be exaggerated.

In effect, the text is usable selectively over a range of different types of courses. Some of the more simple cases would be interesting to undergraduate students in accounting, but they would need to have been introduced to the manner in which the accounting problem is perceived and is treated. Likewise, several of the more difficult cases would be usable on advanced courses in accounting theory in association with other teaching modes, notably journal articles.

Indeed, the demands now being made upon accounting students by the changes referred to by the authors cannot be eased by virtue of a teaching mode such as the case method, which insofar as the teaching of accounting is concerned can with difficulty lay claim to being the *summum bonum* of this age of enlightenment. A case affords an opportunity to exhibit the complexities of a situation. As regards financial reporting, such complexities have two dimensions. First, the complexities of the 'reality' which accounting seeks to interpret: second, the complexities which lie within its accounting interpretation. My experience is that students who lack a reasonably profound knowledge of accounting theory fail to come to grips with the complexities of the accounting interpretation on which the substance of a case may rest.

The question arises, therefore, of defining the market which the authors had in mind when bringing together this collection of cases. This problem is exacerbated by the mix of cases assembled in the text. Doubtless, the authors felt that cases are generally usable on all courses ranging from undergraduate to executive programmes. I suspect that they may not be right.

INSEAD, Fontainebleau Michel W. E. Glautier

Management of Foreign Exchange Risk. *Laurent L. Jacque.* Lexington Books, 1979 (UK), 1978 (USA). xxi + 285 pp. £16.50.

What measures can be taken to protect international business operations from foreign exchange risk? This textbook provides a useful and timely summary of major developments in theory and practice relevant to this question. The book is comprehensive in that it deals with how exchange rates are determined, with the problems of forecasting exchange rates, with the measurement of exposure to exchange risk, and with methods of protecting the firm from transaction and translation exposure. Problems of exchange risk protection are thus placed clearly in context. This benefit is offset, however, by the necessarily brief treatment of some aspects of the subject in a book of 285 pages.

The author's exposition is rigorous with a well organised and systematic presentation using algebraic formulations, graphical illustrations and numerical examples. In general, this results in precise and effective communication. But a weakness is that in some instances, e.g. foreign currency translation, the treatment is abbreviated with a relative lack of numerical examples and reference to empirical evidence. There are also some errors in exposition. Further, the author's analysis of issues is somewhat limited with the consequence that the book fails to convey much of the excitement and controversy currently being generated by the subject. A positive feature, on the other hand, is the discussion of some implications of developments in efficient market theory.

The book is organised into five parts with two chapters in each part. Part I covers the working of the spot and forward exchange markets and discusses how exchange rates are determined. Part II provides a framework for the development of exchange rate forecasts with a useful evaluation of the efficient market hypothesis, purchasing power parity theory and econometric approaches to forecasting. Part III discusses the assessment of a firm's exposure to foreign exchange risk. Accounting and economic measures of exposure are evaluated with the conclusion that accounting exposure is misleading as it fails to incorporate the longer-term impact of exchange rate changes on the economic valuation of the firm. Economic exposure is more relevant and it is shown that this primarily depends on the destination of a subsidiary's output, export and domestic, as well as its origin of inputs, import and domestic. The discussion of the translation issue is disappointingly brief, though perhaps necessarily so in a book of this scope, and there is an error in Table 5–6 on page 137 which provides a numerical example of the net exposures under alternative translation methods. The translation gains/losses for the current/noncurrent, monetary/nonmonetary and FASB 8 methods are incorrect because of the translation exposure of the British subsidiary being wrongly assessed in dollars and not pounds. Later in the numerical example of economic exposure there is also some confusion as the summary Table 6–2 on page 170, dealing with the impact of the inflation-devaluation cycle on profitability, is not consistent with the figures given in the text. Part IV gives an account of how to deal with transaction exposures arising from international trade and international financing and includes a useful exposition of relevant decision rules. Part V concludes the book with a discussion of how translation exposures can be smoothed by various hedging techniques including contractual hedging, involving speculative gains/losses, and financial hedging. The optimal mix of hedging techniques as well as the timing decision are also discussed. The final chapter concludes with some discussion of the relevance of attempting to manage accounting and economic exposures in the context of efficient markets.

Whilst the efficient market hypothesis implies that the management of foreign exchange risk may not be quite so important as many have hitherto believed, the author argues that it is still significant and warrants considerable effort. In an efficient capital market, all relevant and available information is correctly impounded in share prices. Thus it could be argued that the management of accounting or translation exposure would be superfluous because investors would be able to place such exposure in its correct economic perspective. However, this would depend on the market being provided with timely, comprehensive and systematic disclosure of foreign subsidiary transaction, translation, and economic exposures. As this is far from being accepted practice, it is argued that a rationale for managing translation exposure still exists. Similarly, in an efficient foreign exchange market, where the prices of currencies adjust instantaneously to inflation rate differentials, i.e. the purchasing power hypothesis, it could be argued that the management of economic exposure would be superfluous because the inflation–devaluation cycle would have no effect on the economic valuation of the firm. But, it is argued, even in a world of floating exchange rates there may be lags or impediments in the adjustment process. Moreover, such adjustments for general price-level differentials will generally fail to reflect sectoral differences which are pertinent to the economic exposure of the individual firm. Hence a rationale also exists for the management of a firm's economic exposure.

Despite some criticisms, this is a useful book and a worthwhile addition to the literature on foreign exchange risk—a subject which is commanding increasing attention from academics and managers alike.

University of Glasgow S. J. Gray

Economic Analysis of the Financial Leasing Industry. *C. Tomkins, J. Lowe & E. Morgan.* Saxon House, 1979. x + 123 pp. £10·50.

This study was prepared with the co-operation of the Equipment Leasing Association, a body which represents the major leasing companies. The book provides an interesting analysis of this industry which is one which hardly existed at the beginning of the 1970s, but grew during the decade to one of very large proportions. In 1977, 5.4% of the expenditure on plant and machinery, ships, vehicles and aircraft by UK industry was financed through leasing. In 1978, this figure had risen to approximately 8.6%, but this later figure was boosted by a big increase in car leasing: an area in which the Government have since introduced restrictions. The increasing importance of leasing has not escaped the accounting profession, for a standard was introduced in the USA in 1976 and an exposure draft on the subject has been promised for a long time in the UK.

This particular study of the leasing industry was commenced in 1977 and so much of the analysis is based on the figures up to the 31st December 1976. As well as the analysis of published statistics, the study is based on the results of completed questionnaires and interviews. The book begins by considering who are the leasing companies. Most of the major leasing firms are subsidiaries of large banks. The concentration in the industry is examined. Figures are produced on the type of equipment leased and on the size of individual leasing transactions. The range of leasing business is, in fact, very wide. At the one extreme there are what are referred to as 'big ticket' leases involving the acquisition of, say, jumbo jets or oil tankers, and at the other end of the market, the small value leases concerned with such business acquisitions as cars.

One interesting part of the analysis is concerned with the provision made by leasing companies for bad debts. This is particularly important if the method of accounting to be proposed in the exposure draft is in fact accepted. The proposed method of accounting for leases in the books of the lessor is referred to as the 'investment period method'. It allows the leasing companies to recognise most of the profits from the leasing transaction early on in the leasing period. It involves allocating the gross earnings from the lease over the period of the lease agreement on a basis which produces an equal return each year on the amount of capital invested in each year. The capital invested is high at the beginning of the lease but is rapidly reduced because of free depreciation; the lease companies typically benefit by being able to reduce their tax liability early on in the lease period.

The worry about showing most of the profits early on in the lease period is that in fact the profits only arise if the lessee does not turn out to be a bad debt. If the lessee stops paying the rental, say half way through the lease period, then the leasing company has not in fact made a profit, and yet, under the investment period method of accounting, it will have shown profits in the first year or two of the lease agreement.

This study by Tomkins, Lowe and Morgan shows that provisions were often not made for bad debts in the accounts of leasing companies. In fact only nine out of the 17 companies analysed in some detail made provisions for bad debts and the average size of this provision was only 1·4% of the rentals to be received in the year. It has been suggested that if leasing companies are allowed to adopt the investment period method of accounting, they should be required to show the size of the bad debt provision. Investors could then form an opinion as to whether the companies are being prudent in their accounting practices. The conclusion regarding risk that the authors draw from this study is that the lessors are taking hardly any risks at all in terms of the business they undertake, though the authors do say this may only be the case because of the stage of the industry's growth; if it continues to grow it will have to take on riskier business.

The study looks at barriers to new entry in the industry and comes to the conclusion that there are economies of scale, but in fact firms soon arrive at a size beyond which the average costs of business do not decline any further. Entry to the industry does, however, depend on having access to sources of finance and to having taxable capacity. It is interesting that somewhere in the region of 90% of the finance obtained by the leasing companies on which the analysis is based, came from borrowing within the group of companies to which they belonged.

The study tries to measure the profitability of leasing companies; unfortunately, this is a very difficult thing to do as over time there has been a variety of different accounting practices which leasing companies have adopted, and each method spreads the profit of a lease, over the lease period, in a different way. The authors do compare profits on capital employed in the industry; they mention the problems of non-comparability, but, unfortunately, it is not possible to do much about the difficulties. One reason why there is a wish to have a standard for reporting leases in the books of the lessor is to make comparability more meaningful.

Most of the study is concerned with leasing companies, that is the supply side of the market. In the final chapter, however, the authors do look at the demand side. They examine the question: why do lessees lease? There has been a number of other studies that have looked at the same question, both in the UK and in the USA. In this study they find that an important factor influencing small companies is that leasing does not involve them in a large capital outlay. All the studies on the subject seem to suggest that off-balance sheet financing and taxation are not sufficient reasons to explain the growth of this method of financing. Not surprisingly lease financing is found to be seen as part of a financing package that financial managers have at their command: Leasing is one method of financing which, like all the others, has good and bad points. All the factors and all the alternatives need to be looked at when making a financial decision. Financial management textbooks usually see the issue as simply one of a lease versus buy decision which is based on minimising the costs of acquisition. One finds the present value of the two alternative cash flow streams and chooses the one with the lowest cost. Studies, such as this one, into why people lease, show that the issue is really very much more complex.

To conclude, this is a very interesting book which throws light on to many aspects of the leasing industry. None of its conclusions are particularly surprising, but it is nevertheless a very worthwhile piece of research, of which all those concerned with financial management should be aware.

University of Birmingham J. M. Samuels

Consolidated Statements, *R. G. Walker.* Arno Press, New York, 1978. 412 pp. $26.

This excellent volume is part of the Arno Press collection called 'The Development of Contemporary Accounting Thought'. It comprises the bulk of its author's doctoral thesis.

The book starts with a useful scene-setting introductory chapter about consolidation and its history in the UK and the USA. The next six chapters concern the development of consolidated reporting in the UK until 1940. Chapter 2 discusses Dicksee's writings on the valuation of assets; this usefully leads into a discussion on the valuation of investments. Chapters 3 and 4 consider the early questioning about whether investments were fixed or floating assets. If they were fixed, this meant valuation at cost which was a problem when share prices fell. Nobel Industries introduced consolidation in 1922 in order to improve on cost-based valuation of subsidiaries. These chapters include many interesting quotations from *The Accountant*.

Chapter 5 shows how consolidation became less rare in the 1920s, thanks partly to propaganda from such men as Garnsey. However, there were accountants on both sides of the argument about the merits of consolidation. The story of the evidence provided to the Greene Committee is interestingly told. The Institute argued against compulsory consolidation; the Law Society for it! Throughout, consolidated statements were seen as supplementary. Chapter 6 discusses the acceptance of consolidation in the 1930s, but charts the growth of confusion about whether consolidated accounts were indeed to supplement holding company reports or were to report on an 'economic unit'. Chapter 7 summarises this section on UK development.

The seven chapters in the next section of the book look at US developments in consolidation from the 1890s to 1940. There are some interesting digressions and pieces of background in Chapter 8 on state incorporation and disclosure laws. Consolidation looked a sensible way of disclosing the results of merged companies: companies appeared stronger, and accountants stressed the usefulness of eliminating inter-group profits and of presenting 'group' liquidity. Chapter 9 notes that only in 1910 did US accountants import standard asset valuation rules from the UK. There follows a very lengthy digression on 'lower of cost and market', which is perhaps out of place.

Chapter 10 sees the start of a discussion on the valuation of intercorporate investments in the USA. Consolidation was encouraged by the requirement to consolidate for tax purposes (1917 to 1934) and by the acceptance of consolidation by the New York Stock Exchange in 1919. Chapter 11 recounts how holding company accounts were unimportant by 1930 and that the emphasis had shifted to reporting for the 'group', though there had been no real explanation of the usefulness of consolidation. Bankers seemed to regard consolidated reports as more reliable for liquidity measurement.

Chapter 12 contains a long, interesting but peripheral discussion about the emergence of reporting regulations, including 'blue sky' laws. Apparently, in the 1920s reporting in the USA was 'virtually unregulated'. Rulings on the subject of consolidation are looked at in Chapter 13. For example, Accounting Release No. 3 considers consolidation to be the presentation of results *as if* the group were a *single entity*. Why then exclude banks and insurance companies?, the author asks. Such exclusion does leave a homogeneous economic entity but this is not the whole group of controlled companies. Chapter 14 summarises the US section.

The final two chapters try to draw together the main threads of the previous sections and to examine the developments since 1940. Chapter 15 analyses the main issues in consolidation. For example, it asks very clearly the question, which many of us may not have squarely faced: 'what are consolidated accounts for?'. Four answers are said to have been implied or stated by academics and practitioners: (i) to depict the position and performance of the holding company, (ii) to amplify this position and performance, (iii) to supplement the holding company balance sheet in order to clarify liquidity, and (iv) to supplement the holding company financial statements in order to report on the group as an economic entity. The chapter contains a very good summary of the confusion about objectives in the UK and the USA in the 1920s and 1930s.

For example, what is the nature of 'minority interest'? Is it proprietorship or liability? Is minority interest in profit an appropriation or an expense? Should goodwill include that of minorities? Is goodwill an asset or a deduction from shareholders' interests? Should pre-acquisition profits be excluded from reserves? Should intergroup profit eliminations be total or proportional? The answers to these questions depend on the objectives of consolidation. The answers used in practice are not consistent with any *one* of the four objectives isolated.

Chapter 16 analyses developments on both sides of the Atlantic since 1940. The period begins with US concentration on groups and UK concentration on supplementing holding company reports to avoid cost-based valuations of subsidiaries. ARB 51 of 1959 is the first clear *professional* statement that consolidated accounts are primary. In practice, this had been the case for many years in the USA.

Inconsistencies are noted in professional pronouncements; for example on not netting overdrafts against cash and the exclusion of certain subsidiaries. These do not fit with the predominant '*as if*' objective.

More recent pronouncements concern the use of the equity method: APB 10 calls for it to be used for unconsolidated domestic subsidiaries in consolidated accounts; APB 18 extends this to (unpublished) parent company statements; SSAP 1 only concerns consolidated statements, in order to preserve the realisation concept; an Australian draft of 1973 extends it to parent companies.

The book ends somewhat abruptly: its last chapter is missing but may be found in *Abacus*, December 1976.

In general this is an interesting, very well-written and well-argued book. Facts are generously referenced, underlying theories are cleverly tracked down and confusion is clearly laid bare. I had a few doubts about the relevance of some passages, and I would have been pleased to see the analysis in the last two chapters extended to France, Germany and the Netherlands. However, this book is to be thoroughly recommended for academics and, perhaps with guidance on the most relevant chapters, for students.

University of Exeter C. W. Nobes

Financial Reporting, Inflation and the Capital Maintenance Concept. *David Tweedie.* Occasional Paper No. 19, ICRA International Centre for Research in Accounting, University of Lancaster, 1979. vi + 71 pp. £3.00

I found this book by Professor Tweedie very informative. It is a masterly survey of the attempts of the accounting profession to come to grips with the problems of the inflation-induced irrelevance of contemporary accounting.

The book begins with a brief discussion of the effects of price changes on financial reporting and of the need for some alternative accounting system which handles changing prices better than contemporary accounting. Tweedie suggests that three questions must be answered before any decision on current value accounting can be made: (1) Which value measure should be used? (2) Which measuring unit should be used? (3) How are total assets to be measured?

In considering the first question, Tweedie surveys the proposals of the various professional bodies and enquiries around the world. He concludes that deprival value is advocated in the United States but that replacement cost subject to some modifications is the current choice of Australia, New Zealand, the UK and South Africa. The choice of measuring unit is between units of purchasing power and monetary units. Tweedie concludes that after some initial consideration of purchasing power units, most countries currently favour the use of monetary units. The third question deals with whether individual assets should be measured and the measures totalled to give entity wealth or whether the worth of the entity as a whole should be measured. Tweedie concludes that the measurement of entity worth has been rejected in favour of entity wealth.

The next section deals with the concept of capital maintenance. After brief discussions of capital as money and as general purchasing power, Tweedie considers capital as operating capacity. He is able to identify seven versions of operating capability each of which is discussed together with arguments for and against its adoption.

Tweedie then turns to the contentious issue of the treatment of borrowings and surveys opinions about accounting for purchasing power gains on borrowing and gearing adjustments. Lastly he discusses the 'capital maintenance dilemma'–should holding gains be regarded as a part of profit? Tweedie suggests that entity theorists would exclude them, but proprietary theorists would include them.

The book's conclusions are that there seems to be consensus on the measurement of value but that a lot more work is necessary before there will be agreement on how income is to be measured.

The book reveals the variety of opinions held by professional bodies and individuals about the correct way to allow for inflation in contemporary accounting. For nearly every opinion Tweedie quotes, he finds another which is diametrically opposed to it. If the book has a theme, it must be one of despair. Tweedie's concluding plea for research to get agreement does sound naively optimistic when the immediate past is surveyed.

Whilst Tweedie's scholarly detachment is admirable, it would have been very interesting to get his opinion on some of the many issues which he discussed. But this was not his objective.

Tweedie has succeeded in his objective of examining the problems caused for accountants by inflation. His well written and researched book should be read by all accounting policy makers and theorists. It is a comprehensive survey of the current state of the lack of art.

University of Adelaide M. S. Henderson

Budget Planning and Control Systems. *L. R. Amey.* Pitman, 1979. xiv + 273 pp. £12.

I find it hard to understand why this book was given its title. It has very little to do with budgets, with planning systems, or with control systems after chapter 2. It has a lot to do with cybernetic mathematics and with mathematical statements of control theory, but these are quite different topics, which do not have any behavioural, organisational, forensic, strategic, or political elements.

As such, the book is really of interest only to mathematical analysts. People who are not already well-equipped in mathematical notation should not start it. Those who are so equipped, but are looking for guidance on how to design a system in reality, should not start either. If the reader is a mathematical economist/analyst who seeks an intellectual challenge, the book has much to commend it.

The first chapter is devoted to specifying a budget planning system, and states that planning and control should be carried on through different systems. The contrast between economics (planning) and stabilisation (control) makes a sound approach for the one a misfit for the other. Also, there are fundamental differences in the approach to incentive and in the mathematical substance of the two subjects.

The need to make an explicit statement of the planning objective is rehearsed, and the point is validly made that few budgeting systems do this well. A useful contrast of the budget view of competitive strategy and of cost reduction as solutions to the budget problem is drawn. The author points out that the former is not considered in budgeting, while the latter is—as their potential for achieving results are the other way round, he makes a good case for changing budgets to be more outward looking.

The second chapter is entitled Dynamic Budget Planning, and addresses the immense range of issues which a manager ought to consider in planning. For instance the manager ought not to consider only a year, but the entire future. Also, he takes a view on how this should be done in mathematical terms. It is unfortunately not at all clear how a firm could follow this advice. The set theory formulation of the problem does not really help anyone, as the data are not formulated, nor are the characteristics of the relevant equations given or even hinted at. The author apparently realises this problem, and introduces the concept of 'proximate budgeting' to cope. This is supposed to be easier than dynamic. This reviewer found it just as obscure.

The views of cyberneticians are listed (chapter 3) on how a firm ought to be controlled. Chapters 4 and 5 set up a series of cybernetic straw men, and knock them down again. In his attempt to specify a budget control system, he draws very heavily on the work of the early cyberneticians, such as Ashby, without showing how their concepts can be employed in any real budget system.

Little can be said in favour of this book. It adds nothing to our theory base that the cyberneticians had not given us before. It adds nothing to our ability to produce a sound practical budgeting system, as no practical guidance is offered. It is an essay in mathematical planning for theoretical micro-econometricians, nothing more.

Manchester Business School — Andrew M. McCosh

Industrial Relations: An Introduction for Accountants. *Peter McArthur.* The Institute of Chartered Accountants in England and Wales, 1979. vi + 90 pp. £3.95.

This volume is part of the series entitled 'The Accountant in Industry and Commerce'. It deals chiefly with the conduct of industrial relations at company level and is intended to be a guide for the chartered accountant who has just entered industry. The author is Programme Director in Industrial Relations at Ashridge Management College.

The bulk of the book consists of six chapters. The first provides an introductory analysis of industrial relations; for example, the author outlines the elaborate system of procedural and substantive agreements that governs the relations between management and unions. The second chapter is devoted to trade unions: their organisation is described and some aspects of trade union recognition and the closed shop are discussed.

Negotiation and consultation are the subjects of the third chapter; the emphasis is placed on negotiation. The author examines the process and stages of negotiation and provides an analysis of the factors that influence the conduct of negotiation and consultation. The following chapter treats of worker participation and disclosure of information; there is an outline of the statutory requirements concerning information disclosure and a discussion of disclosure in practice.

Chapter 5 takes the reader further into legal matters by describing the increasingly important part that the law is playing in British industrial relations. The chapter contains an exposition of the contract of employment and presents tabular summaries of some of the more important features of a number of recent statutes. There is an explanation of the functions of agencies such as the Advisory, Conciliation and Arbitration Service (ACAS) and the legal aspects of discipline and dismissal are set forth. The last chapter, entitled 'An Overview', explains various managerial approaches to industrial relations and the implications for the accountant in industry.

Two appendices follow: the first consists of a glossary of industrial relations terms and a list of abbreviations used to describe various official bodies, statutes and trade unions; the second presents suggestions for further reading.

The author is to be congratulated upon his work. The complexities of industrial relations are such that only a writer who combines considerable knowledge of the subject with a clear and succinct style could produce a book that is so useful and concise. However, one caveat must be entered. It is likely that legislative changes will soon reduce the value of a few parts of the volume; the treatment of union recognition, for example, is likely to stand in need of amendment. But all works dealing with the practicalities of modern British industrial relations are bound to suffer from this defect. The problems that the reader is likely to face in trying to keep abreast of rapid and important changes in industrial relations could perhaps have been reduced had the author provided a list of the addresses of official and other bodies that issue periodicals—some free of charge—on industrial relations. This information could well have been added to the second appendix.

University of Edinburgh K. I. Sams

Survey of Published Accounts, 1979. *L. C. L. Skerratt (Ed.)* Institute of Chartered Accountants in England and Wales, 1980. 303 pp. £12.95.

This eleventh survey is the first to be produced under the direction of the new editorial board which replaces the previous editor. The new editor is an academic; and there are several more academic contributors. For me, the resulting shifts of emphasis within a broadly consistent outline make this year's survey even better than last year's. The book has increased in size by about 20%, like some other things!

The policy of introducing new topics has continued, with the addition of sections on pensions, leases and employment reports. A sub-section on accounting theory which discusses the recent Watts and Zimmerman paper, among others, would have been unlikely in previous editions. However, there are not just new sections: a changed spirit appears to pervade the whole book. There seems to be greater detail and a greater clarity of presentation and ideas. Each section is usefully divided into 'Requirements', 'Analysis' and 'Examples'.

For instance, let us look at the section on reporting for associated companies in profit statements. In 1978, there were sub-sections on (a) Standard Accounting Practice; (b) Treatment; and (c) Examples, In 1979, there are sub-sections on (a) Requirements: (i) statutory, (ii) standard accounting practice (though there is a curious lack of reference to ED 25) (iii) the international standard, (iv) EEC fourth directive; (b) Analysis of Practice; and (c) Examples. Throughout, 'opinion' is sensibly kept to a minimum, allowing us to use the facts in the way we please.

Thus, the survey is even more interesting and useful than it has been in previous years.

University of Exeter C. W. Nobes

Transfer Pricing and Multinational Corporations. *Sylvain Plasschaert.* Saxon House/ECSIM, 1979. 120 pp. £8.50.

Transfer pricing in the domestic context is problem enough but in the complex environment of international business it becomes a highly controversial and often emotional issue. This arises from the potential for multinational corporations to manipulate prices in order to reduce the overall taxation burden, avoid exchange controls, limit foreign exchange risks, and gain competitive advantages in foreign markets. Currently it is a problem of special interest in the context of the development of Codes of Conduct for Multinationals at the level of the United Nations and OECD.

Professor Plasschaert's short but useful book on the subject is thus a timely contribution. The author provides a succinct review of theory and evidence on the transfer pricing issue including discussion of the search for optimum internal prices in divisionalised enterprises, the transfer pricing network in multinational enterprises, inducements for transfer pricing manoeuvres, and restrictions on the ability to manipulate transfer prices. There is a balanced approach throughout. The book concludes with some suggestions for constructive solutions to the problems identified.

The book is aimed at informing a wide non-specialist readership, especially those involved in policy-making, including the representatives of home and host governments, and trade unions, as well as company managers. This motivation is emphasised by the presentation of a useful 13 page summary at the beginning of the book especially for the benefit of those readers under time pressure and wishing to obtain a quick briefing.

Whilst in theory there is substantial potential to manipulate transfer prices for the overall benefit of the multinational, the author points out the specific circumstances under which such potential can really be said to exist and identifies the constraints on exploiting potential gains. Major contraints are the distortion of managerial control, conflicts between inducements, and the regulatory activities of governments.

The author concludes that though there appears to be no optimal transfer pricing formula from a managerial control standpoint it would seem that logically the principle of an 'arms-length' price is appropriate from the point of view of government control. However, many products cannot be compared readily with others, especially in respect to processed intermediate goods, and hence market prices cannot easily be assessed. Another problem identified is that a transfer price may well be considered unfair or socially unacceptable, even if it is an 'arms-length' price, where the price is the result of the company's exercise of monopoly power. Hence transfer pricing manipulations must be distinguished from the impact of market imperfections which raise wider economic and social issues associated with the assessment of a 'fair' price.

The author's review of the empirical evidence available suggests that whilst the proportion of internal trade by multinationals is growing, and is as high as a half of the total export trade of USA based multinationals, evidence of actual transfer pricing behaviour is still very limited and certainly insufficient to warrant generalisation. Whilst studies by Lall, Vaitsos, and Roumeliotis provide some evidence of specific cases of manipulation, in situations where political risks are high, where there are restrictions on profit remittances and where there is relatively unsophisticated host country regulation, these findings cannot readily be extrapolated.

Professor Plasschaert's concluding suggestions not surprisingly include the need for more research on discovering how and why actual transfer prices are practised. Clarification of the relationship between 'arms-length' and 'fair' prices is also proposed as a subject for investigation. More disclosure of pricing practices is called for with the suggestion that rules should be developed to obtain adequate disclosure without impinging on business confidentiality. However, no specific proposals are forthcoming. International harmonisation of taxation and other regulations is supported and the possibility of assessing the tax liability of a multinational on a global basis considered worthy of further investigation. A second-best approach to harmonisation, it is suggested, would be to improve cooperation between governments especially in the form of exchanges of information. A final suggestion in this useful overview of the transfer pricing issue is that whilst it would be naive to think that suspicions between governments and business can be entirely removed it is possible that relationships could be improved by the establishment of clear and accepted rules of behaviour by both sides.

University of Glasgow S. J. Gray

Business Accounting I (2 Vols.) *B. E. Elliot.* HFL (Publishers) Ltd., 1980. viii + 360 and viii + 424 pp. £6.50 and £5.95.

The author states that he was encouraged to write these two volumes in line with recent BEC proposals for business education. The intention was to provide, in the first volume, a text which would give greater emphasis to case studies and project work. The second (companion) volume provides a wide range of exercises, drawn from a variety of sources, which include much practical use of current published sources of financial information.

The first volume is divided into seven sections (24 chapters in all). Section 1 examines reasons for producing accounting information. Four chapters discuss in a non-technical (and perhaps rather superficial) way notions of growth, the change in the financial position over a period of time, money measurement, the comparison of returns from different entities (an introduction to ROCE) and an introduction to ways, other than the historic cost convention, of stating the financial position of the firm. Each chapter commences with stated 'Learning Objectives' followed by a discussion of each point introduced, interspersed with self-assessment style questions. The approach is not entirely novel and fails in various respects. This type of text is expected to be used by students who are at a fairly elementary level and one wonders if the author is right in not supplying answers to the majority of questions posed. To be fair, the justification of this criticism wanes in later sections of the book when some exercises merely complete or follow from examples provided in preceding pages of discussion.

Students could become somewhat bewildered. For example, on page 21, a question is asked in which the Hicksian definition of profit is given—nowhere has this been referred to in previous narrative and no guidance is provided as to who or what a Hicks is. Indeed, nowhere in the whole of volume one are references provided, yet the author states in the preface that his own mode of teaching is to provide supplementary reading and to encourage students to use the library. This is an area to which greater attention could have been devoted, particularly when one considers that many students for whom this book is designed may have to be self-motivating (e.g. part-time students).

Sections 2 and 3 examine the flow of funds and the classification (and analysis) of information into a balance sheet and profit and loss account. Chapters 5 and 6 use as an introductory tool the notion of 'the square of duality', a useful approach, commencing with an integrated profit and loss account and balance sheet which then leads on to a separate division between an income summary and balance sheet. Chapters 7 and 8 interpret this division of information and examine the use of various ratios. Section 4 is the largest, with seven chapters devoted to the writing up of records into ledgers and journals and the extraction of a trial balance. Progress is somewhat laboured but then one is reminded that this book is also aimed at prospective candidates for IAS examinations, the accounting technicians' qualification.

Section 5 deals with the problems of calculating periodic profit and introduces matching and accruals concepts. Depreciation is poorly discussed in chapter 17, the emphasis again being towards the mechanics of book-keeping, though SSAP 12 is usefully provided by way of an appendix. Section 6 discusses partnerships and limited liability companies. Section 7 provides a review by reverting to the subject of return on capital employed which was briefly introduced in chapter 1.

Whilst this reviewer has not been enthusiastic about yet another introductory book on financial accounting, a recommendation can be made to those seeking a compilation of exercises as provided in the second volume. Here, a wide variety of exercises are provided which many teachers could very well adapt into their own teaching programme; a wide cross-section is provided ranging from introductory courses to some (perhaps limited) post-experience courses.

University of Exeter John J. Glynn

Essential Accounting for Managers. *A. P. Robson.* Cassell, 4th ed., 1979. ix + 130 pp. £3·15.

Many's the introductory (and all too often remaindered) book that shares the aim of this one: to show how an understanding of accounting techniques can help managers make better informed plans and decisions. What distinguishes Professor Robson's book is that, by using broad strokes, concentrating on central concepts and resisting the temptation to wallow in detail, it actually comes very close to achieving that aim. Nobody would pretend that in 130 pages all the answers could be given; but the battle is more than half won if one can succeed in showing (as this book does) what some of the problems are and what sort of questions one ought to be asking.

Robson discusses six major topics: the financial accounts and ratio analysis; the need for and methods of short term budgeting; an outline of the net present value, internal rate of return and payback methods of project evaluation; some of the problems of accounting measurement (dealing particularly with stock valuation, depreciation and the allocation of fixed costs, subtly encouraging thereby a healthy scepticism for the apparent precision of the accountant's figures); variance analysis (very clearly explained, in diagrams as well as figures); and breakeven analysis, marginal costing and contribution pricing. His exposition throughout is deliberately simple. The furthest he goes in the use of any mathematical techniques is discounting and scatter charts. Yet simplicity is not used as an excuse for naivety, and without confusing the issues he leaves readers in no doubt about the limitations of and assumptions underlying such techniques as ratio analysis and breakeven analysis. Most importantly, perhaps, he emphasises the need for managers both to seek financial information relevant to their own spheres of responsibility and (subject to weighing up potential costs and benefits) to participate with accountants in the design of accounting reports. At the same time the point comes across that not all relevant information can be expressed in figures.

The book does have its shortcomings. Given the elementary treatment of individual topics in a book of this length the lack of any guide to further reading is a major omission; managers wishing to put more flesh on the bones will find themselves faced with a vast choice of books, many of them at best indifferent. Also, although at various points in the text Robson stresses the need to consider inflation and current costs, those who believe that one of the most important aspects of inflation accounting is teaching businessmen how to deal with the problem in their decision-making may wish the emphasis had been greater. For the above reasons, although the book can and does stand on its own, it may be that it would be better used in conjunction with short courses. On a point of detail, it is a pity Robson did not refrain from suggesting figures for the current and acid-test ratios, something which, after all, is rarely done for any other ratios. True, he warns that 'the 2:1 yardstick should be looked upon only as an average', but 'average' is undefined; moreover, concrete figures often linger in the memory when the caveats have long been forgotten.

Who, I wonder, would wish to identify himself with the grey, faceless person depicted on the book's most unprepossessing cover? It does, however, encase a lively introduction to many of the techniques and problems of accounting that the manager is likely to encounter. By highlighting the ways in which managerial decisions may affect a company's profitability and financial position (particularly the cash position) and the ways in which accounting reports may help to identify areas of managerial performance for further investigation, the book goes a long way towards ensuring that managers and accountants are at least on the same wavelength.

London School of Economics Christopher Noke

A Practical Approach to Business Investment Decisions. *Richard J. Briston and Jack Liversidge.* Macmillan, 1979. viii + 234 pp. £15.00

This is an unusual and interesting addition to the already vast literature on business investment decisions. The authors' aim has been to provide a mature discussion which is critical and 'not over-simplified' and which at the same time is realistic and practical. They hope that it will be useful to both managers and business students for whom, in the authors' view, advanced mathematics apparently has no place. These are worthy objects which the authors fall short of achieving at times largely because of the difficulty of trying to do all of these things in a book running to just over 200 pages.

At the outset there is the overwhelming question as to who will read this book. Managers on the whole will tend to be put off, at the very least by some of the mathematics and mathematical notation, despite the avowed aims of the authors. Business students (no particular class is specified) taking elementary courses will find difficulty in appreciating the text whilst those at business schools, for example, have a wider choice of extended discussion more appropriate to their tastes and level of maturity. Those studying for professional examinations, if they are to be included, will also experience some difficulty. Despite these reactions, this reviewer could not put the book down, if only because, like a good 'whodunnit', interest is aroused from the start as to how the authors will face up to the stiff challenges they have set themselves.

The first three chapters, taking up a quarter of the book, discuss the investment decision process and its relationship to the decision maker, corporate objectives and planning. Straightaway it is made clear that investment decisions include, in addition to expenditure on fixed assets, expenditure on research and development, advertising and promotion, training and the cost of reorganisations. For this we must be thankful as there is a surfeit of cliché-ridden texts which never go beyond what may be called the fork-lift truck syndrome. Hopefully, the authors will consider extending this approach of considering investment expenditure in areas not usually covered in more traditional texts. Certainly, the market is not saturated with 'practical' books on non-business or quasi-Government investment decisions encompassing investment in, for example, the Social Services (eg a new hospital) or in the state industries. Having said this, the treatment of the discussion in these chapters is not wholly satisfactory. A brave attempt is made, for example, to review relevant organisation theory but this is what it is—a review. Similarly, planning is covered at a very elementary level in a few pages. In neither case is there adequate discussion of the underlying realities. An attempt to place investment decisions within these broader contexts is most welcome and necessary (though rarely seen) but the authors should have settled for a one chapter overview (perhaps this is what the three chapters are or are meant to be) or they should have considered an extended, 'realistic' discussion.

Thereafter, we get into the meat of the subject and it is unusual, and again welcome, to see the authors start off, in Chapter 4, with a discussion of research and development. The treatment is very much in an OR mould but this is no more than a reflection of current trends. In support of the authors' desire for realism, however, some discussion is needed of current practice in the multinationals, at least, covering, for example, oil exploration, pharmaceuticals, cars, tobacco and drink; and similar industries which incur heavy research and development or promotional expenditure.

The title of Chapter 5 'The Evaluation of Projects under Certainty' is almost about a contradiction in terms. However, quibbling of this sort is out of place for a chapter which sets out fairly clearly, if briefly, the techniques and issues related to elementary evaluation principles. The authors have studiously set out the net present value v. internal rate of return arguments. Their contention that the yield method tends to be more popular (*sic*) in practice whilst the NPV method is advocated by most academics is probably correct. However, what is required here is firmer guidance for practitioners and less sitting on the fence, something which some academics, even at a fairly elementary level, are prepared to do (see, for example, Franks and Broyles: *Modern Managerial Finance*). This would, of course, require a fuller treatment. The following chapter on 'Project Appraisal under Uncertainty' is good as far as it goes but if beta analysis, for example, is to be introduced then a more extended discussion is needed, if only to make some passing reference to the theories and literature on efficient capital markets.

For a book aimed at realism and practicality, the next chapter on 'Conventional Theory—Some Problems' is really inadequate. True, practitioners will probably have the taxation angles at their fingertips but it must be seriously questioned whether, from the authors' cursory treatment, a business student reading this book as an introduction to the subject could compute with any confidence cash flows taking tax considerations into account. A reasonably comprehensive example is required. Similarly, two short paragraphs on leasing will not do and a search of the index (and the text) failed to reveal any further reference to this topic in general and to buy v. lease decisions in particular, apart from the obvious statement '. . . if an asset is leased rather than purchased . . .'.

The authors' reasoning in inserting Chapter 8 relating to overseas projects, is not clear, given the substance of the chapter or rather the lack thereof. Again, with an eye on realism and practicality, it is interesting that there are no concrete references to the multinationals, and how they operate in practice.

The treatment of inflation in the next chapter is good within the limitations of the size of the book. Although fairly obvious, the authors place just enough emphasis on the double accounting pitfalls involved in inflating all cash flows, whilst using an 'inflated' discount rate, to put on their guard those 'practical' managers who have been found wanting in this respect. However, some reference to investors' expectations regarding inflation would have rounded off the treatment, whilst the section on negative interest in inflationary conditions needs tightening up; as written it tends to be somewhat ambiguous.

The topics of the remaining two chapters are rarely found in most books of this kind and the authors are to be thanked for putting them in. At the risk of being repetitive, however, the chapter on 'Empirical Work' would have been substantially enhanced if it were fuller and contained more concrete reference to actual companies, somewhat along the lines of the traditional case method.

From the compliments and reservations expressed above, it will be seen that this is a very uneven book. The authors have fallen between several stools in attempting to reconcile rigour with realism and the demands of managers with those of a a wide body of students. They have inevitably failed in some respects but they are to be congratulated on discerning the need for and attempting to write this book. It could well gain wide acceptance but this will require some considerable rewriting and, in the reviewer's opinion, extension of some topics of discussion. Furthermore, at £15 it is too expensive, especially when matched against competing texts on the market. Mathematical typesetting has never been cheap and the insistence on the extensive use of fairly complex mathematical notation (including superscripts on subscripts) does not help matters, especially when the argument is rarely advanced by such means. Perhaps the solution to this problem of cost is obvious.

London R. J. Baskin

A History of Accounting in America. *Gary John Previts and Barbara Dubis Merino.* John Wiley & Sons, 1979. xii + 378 pp. £11.50.

The principal theme of this book is, in the words of its sub-title, 'an historical interpretation of the cultural significance of accounting'. The authors' aim is to set the art of accounting, and development of the profession, in the context of the changing culture of the American nation from its colonial beginnings to the present era. Thus there is little mention of accounting techniques, while the formulation of theory and promulgation of standards receive intermittent attention. The emphasis is upon the ethos of business, finance and public administration in each period, and the ways in which accounting either took its character from that ethos or, more recently, made some positive contribution to it. Previts and Merino concentrate on the sociological aspects of the discipline, and their book must be judged accordingly.

The earlier chapters are introductory. Colonial accounting was imported from England, and its advancement was slow before the establishment of a stable currency about 1800. Double entry was not generally used, and in agricultural economy systems of 'bookkeeping barter' proliferated. The growth of manufactures and of railroads quickened the development of more systematic methods, and the expansion of business after the Civil War, in the *laissez faire* atmosphere of the 'Gilded Age', stimulated demand for accounting services. The injection of British capital into the expanding economy, and importation of chartered accountants to audit the relevant business, led to the formation in 1887 of the American Association of Public Accountants; but the real breakthrough came with the New York State CPA law of 1896, and the authors gave much space to this first measure of legal protection.

From about 1890 to 1920 the social Darwinism of the Gilded Age was vigorously combatted by the proponents of the progressive movement, among whom were the accountants Charles Waldo Haskins, Elijah Watt Sells and Harvey S. Chase. Antitrust legislation, regulation of public utilities, reform of municipal governments and the introduction of federal income tax provided the background to the formation of a native American profession from which the British pioneers were soon extruded. From the first the AAPA laboured to promote accounting courses in universities, and to raise standards of competence and of ethical conduct. Its aims, however, were largely frustrated by the dichotomy between 'qualified' accountants and 'licenced' practitioners, organised in the state societies of CPAs. New York and Illinois had examinations almost impossible to pass, and were accused of unfairly protecting the founder members; other state legislature were anti-monopolistic, and CPAs were licensed with minimal tests of competence.

During the crucial period 1921–36 the profession was fatally weakened by rivalry between the American Institute of Accountants (since 1916) and the American Society of Certified Public Accountants. The latter adopted a complacent attitude to ethical standards, contingent fees and advertising, and undermined the efforts of the AIA to raise the level of practice. The glorification of big business up to 1929 made the auditor the agent of the corporation rather than of the stockholders, and the absence of accepted theory increased his impotence. In the view of Previts and Merino it is unjust to blame accountants for the excesses of the 1920s or the Wall Street crash—there was little they could do, one way or the other. After the débâcle, the establishment of the Securities and Exchange Commission threatened accountants with regulation and loss of status. In good time the AIA and ASCPA amalgamated in 1936, and began the long-overdue task of developing accounting and auditing standards and ethical principles.

After 1945 unparalleled prosperity, high taxation and governmental management of the economy made accountancy the major profession it is today. Spurred on by the criticisms of the American Accounting Association the AIA (now the AICPA) sought to conceptualise practice and make standard-setting more rigorous through the Accounting Principles Board—with only partial success, and not always helped by the SEC. With the 1970s came the Financial Accounting Standards Board, increasing academic influence, rising emphasis on user-orientation and the social aspects of financial reporting, and the thorny problems of inflation accounting and multinational corporations. These factors are too new to be seen in proper perspective, and Previts and Merino can do little more than take note of them.

Throughout the book the style and presentation are clear and logical, if a little monotonous; perhaps the nature of the subject, and the rather grey personalities of most leading figures, are to blame for the unexciting character of much of the writing. The illustrations are well chosen, and the bibliography and notes very full. It may be said that the expressed objective of setting American accounting in its changing socio-economic context has been achieved. *A History of Accounting in America* is essential reading for all academic accountants and accounting historians, may be commended to advanced students, and ought to be on the bookshelves of every member of the profession on both sides of the Atlantic.

University of Nottingham G. A. Lee

Inheritance and Wealth Inequality in Britain. *C. D. Harbury and D. M. W. N. Hitchens.* George Allen & Unwin, 1979. xi + 155 pp. £12.00.

This volume contains the results of a detailed empirical investigation into the importance of inheritance in the distribution of wealth. The main conclusion is that inheritance has been the most important single source of inequality in personal wealth in Britain in the recent past.

This investigation by Professor Harbury and Dr. Hitchens covers a period of over 100 years. The basic method used was to compare the wealth left at death by different members of the same family. To do this, sample names were drawn for eight groups of individuals who had left large estates and attempts (usually successful) were then made to trace the relevant predecessor or successor. So, for example, sample I consisted of men dying in 1973 and the problem was to trace the estates of their fathers. The exercise was done with the thoroughness and care required to build up a reliable picture. For instance over 600 letters relating to some 400 estates were sent to relatives, solicitors and some others such as churchyard superintendents, local libraries and former employers. The searching at times also got as far as visits to churchyards in order to identify gravestones.

One interesting case unearthed by the authors can be repeated here. 'We met an employee of a spinster, of no apparent occupation, and about whom we were uncertain of the source of her wealth and in particular whether she was perhaps, in one sense, self-made. Her probated estate in 1973 was worth approximately £350,000 and her builder father left about £30,000 in the 1930s. We discovered that she had retained unchanged the identical seventy properties left by her father and the difference in value was entirely accounted for by changing house prices.' (p. 36).

In the absence of complete information, studies of this nature inevitably have their limitations. For example, it was not possible to take into account the gifts and inheritances a person received from all sources, but only the values of estates left by the father and, in some cases, the estates left by other relatives. Nevertheless, incomplete information does not mean that nothing at all can be said on the subject, and too much careful research has gone into this particular study for its results to be ignored.

The results are certainly interesting, and may or may not confirm personal views regarding the wealthy. The first conclusion is that whether or not a person has even a moderate level of wealth depends mainly on whether or not he has a wealthy father. Then there is the question regarding the proportion of the wealthy who are 'self-made' in the sense that they either made their own fortunes or significantly increased their original inheritance. Dividing people into 'inheritors' and 'self-made' is not easy—as the example of the builder's daughter shows. However, probably 'between two-thirds and four-fifths of those who died rich in the third quarter of the present century owed their wealth to inheritances and the rest to entrepreneurship and luck.' (p. 131).

It also seems that the rich really do intermarry. In the study, about 60 per cent of the rich individuals who had rich fathers married someone from a wealthy family. Some men did acquire substantial wealth through marriage but not many. Perhaps Frank McKinney Hubbard was right when he said that 'Nobody works as hard for his money as the man who marries it'.

The relationship between sons' occupations and inheritance also produced some interesting results. As expected, inheritance is relatively important in agriculture. However, several other areas also seem to favour inheritors, namely food, drink and tobacco, metal manufacture, textiles, distribution, the professions and public administration. The areas which appear to favour the self-made are chemicals, metal goods, clothing, paper and printing, transport, finance and miscellaneous services. The analysis of fathers' occupations produced similar results. This is not perhaps entirely surprising when 54 per cent of the sons in the sample tended to follow the same occupation as their father.

The authors do not spend much time speculating on the reasons for their results, but concentrate strongly on the empirical side. In doing so, they have provided some very valuable evidence on this much discussed topic. As the authors themselves suggest, there is clearly room for more empirical work in this area. Nevertheless, this is an extremely useful study and will be essential reading for all those who are seriously interested in the distribution of wealth.

University of Exeter Simon James

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The Lessons to be Learned from the Development of Inflation Accounting in the UK[1]

C. A. Westwick[2]

1. Introduction and objectives of paper

The aim of this paper is to recount briefly the story of the development of inflation accounting in the UK from 1946 to the present day. The objective of doing this is to see, *with the benefit of hindsight*, what we did right, what mistakes we made, and what lessons the accounting profession, the Accountancy Standards Committee (ASC) and others should perhaps draw from the experience of the past 34 years in general, and the last 10 years in particular.

As many readers will know, I have been intimately concerned with much of ASC's work in this area since 1971, although my practical involvement in inflation accounting goes back to 1960 with my work for the Centre for Interfirm Comparison on measuring company efficiency and profitability and I can remember writing to my MP on the subject in the 1950s. This involvement is both a qualification and disqualification for writing this paper. I can perhaps claim to know about much of what happened from first-hand experience, but equally my involvement must make me biased, although I have tried to avoid such a bias in what follows.

The historical section does not pretend to be complete. Not unreasonably, I hope, I have dealt most extensively with events in which I was involved. I very much hope that others will be persuaded to contribute their recollections of other events, and indeed to comment on and balance my own, no doubt imperfect, recollections.

The lessons which I suggest we should all consider drawing from the development of inflation accounting are of course also influenced by my experience of ASC's work in other areas.

2. Early history (1946 to 1970)[3]

Not surprisingly, interest in inflation accounting increases as the rate of inflation increases. Diagram 1 shows the annual rate of inflation in the UK from 1946 to date. I have superimposed on the graph the dates of some of the key events in the development of inflation accounting in the UK (see also Tables 1 and 2).

Inflation was high in the immediate post-war period and two proposals were put forward at this time by the Institute of Chartered Accountants in England and Wales (ICAEW) namely N12 and N15. It will be seen from the graph that both N12 and N15 were published after inflation had peaked. I would conjecture that when inflation had started to rise in 1946 and 1950 the ICAEW had set up a committee to examine the problems but by the time the committee's deliberations saw the light of day in January 1949 and May 1952 respectively the rate of inflation and interest in the subject had both fallen.

2.1 *N12: Rising Price Levels in Relation to Accounts (January 1949)*

This statement said that 'any amount set aside to finance replacement (whether of fixed or cur-

---

[1] This paper is based on a talk I gave at Exeter University in the spring of 1980. I am grateful to the following for their comments on the draft, and should like to make it clear that they are in no way responsible for any errors in it, and that they do not necessarily share my views: J. P. Carty, R. G. W. Codd, J. Foyle, P. R. Hinton, G. N. Hunter, D. S. Morpeth, Sir Edmund Parker, J. M. Renshall, Sir Francis Sandilands, Sir William Slimmings, T. R. Watts, G. Whittington and R. G. Willott.

[2] The views expressed are mine and are not necessarily shared by my firm (Arthur Anderson & Co.).

[3] For an interesting and more detailed description of the early part of this period see M. Mumford, 'The end of a familiar inflation accounting cycle', *Accounting and Business Research*, Spring 1979. For an account of the period 1918 to 1936 see G. Whittington, 'Pioneers of income measurement and price level accounting', *Accounting and Business Research*, Spring 1980.

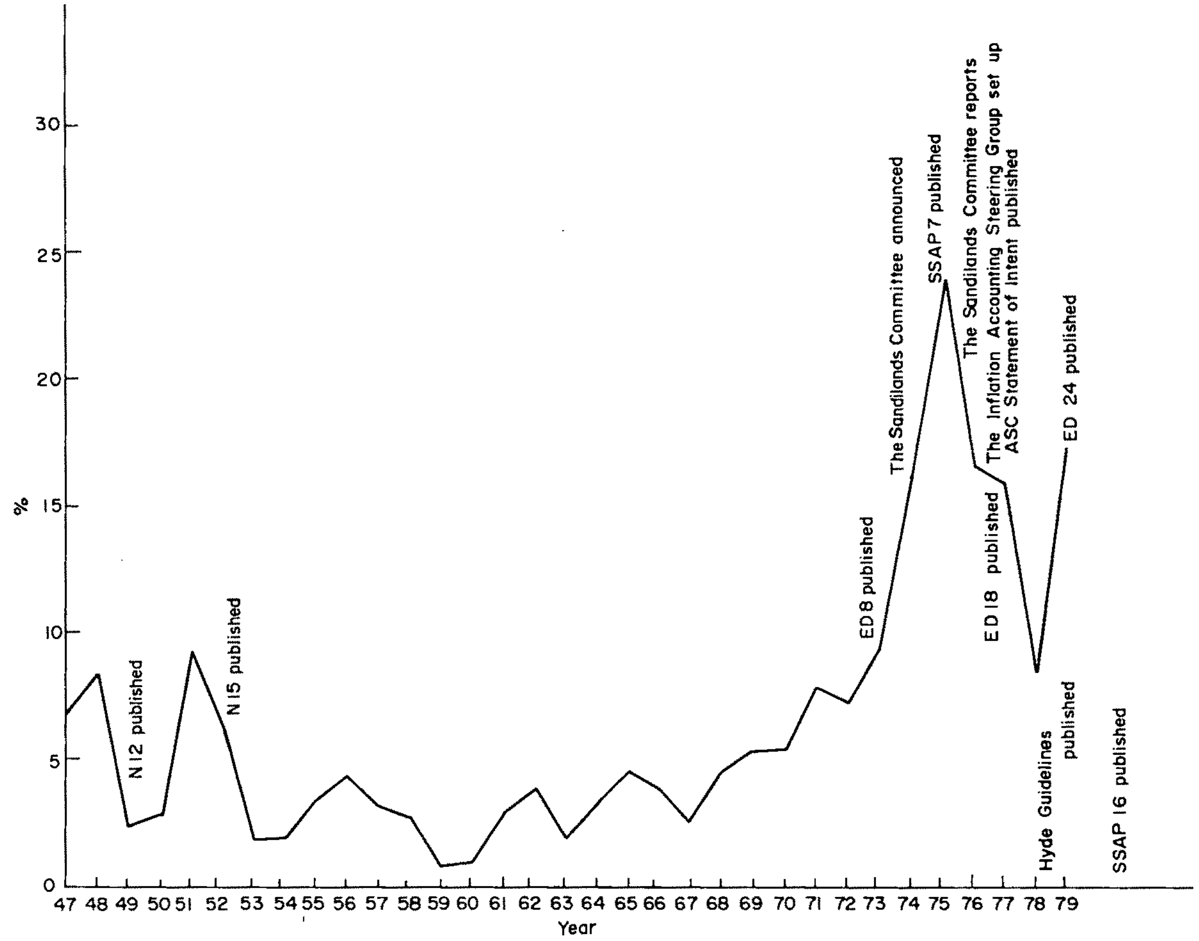

Figure 1
Inflation in the UK 1947–1979

Table 1

Key Dates in the Development of Inflation Accounting in the UK

Events	*Date*
N12: Rising Price Levels in Relation to Accounts	January 1949
N15: Accounting in Relation to Changes in the Purchasing Power of Money	May 1952
ED8/SSAP7 Accounting for Changes in the Purchasing Power of Money	January 1973/May 1974
The Sandilands Committee	
Government announces intention to set up committee	July 1973
Committee appointed	December 1973
Report signed	25 June 1975
Report published	September 1975
The Inflation Accounting Steering Group	January 1976
ED18: Current Cost Accounting	November 1976
ASC Statement of Intent	July 1977
Inflation Accounting—Interim Recommendation by ASC (Hyde Guidelines)	November 1977
ED24: Current Cost Accounting	April 1979
SSAP16: Current Cost Accounting	March 1980

Table 2
Inflation in the UK

Year	*Index*	*Percentage increase over the previous year*
1946	54.5	
1947	58.2	6.8
1948	62.7	7.7
1949	64.2	2.4
1950	66.0	2.8
1951	72.0	9.1
1952	76.3	6.0
1953	77.6	1.7
1954	79.0	1.8
1955	81.7	3.4
1956	85.3	4.4
1957	88.0	3.2
1958	90.4	2.7
1959	91.0	0.7
1960	91.9	1.0
1961	94.6	2.9
1962	98.2	3.8
1963	100.0	1.8
1964	103.3	3.3
1965	108.0	4.5
1966	112.1	3.8
1967	114.9	2.5
1968	120.1	4.5
1969	126.5	5.3
1970	133.3	5.4
1971	143.6	7.7
1971	80.0	
1972	85.7	7.1
1973	93.5	9.1
1974	108.5	16.0
1975	134.8	24.2
1976	157.1	16.5
1977	182.0	15.8
1978	197.1	8.3
1979	223.5	13.4

Sources:
From 1946 to 1971 Consumer price index (1963 = 100).
From 1971 to 1979 Index of retail prices (1974 = 100).

rent assets) at enhanced costs should not be treated as a provision which must be made before profit for the year can be ascertained, but as a transfer to reserve'. It also stated that any reserve so created should be labelled so as to indicate that the directors regarded it as not available for distribution. N12 went on to recommend that fixed assets should not be written up in the balance sheet on the basis of estimated replacement costs.

2.2 *N15: Accounting in Relation to Changes in the Purchasing Power of Money* (*May 1952*)

It would not be unfair to say, I hope, that N15 repeated much of what was in N12 but added that 'directors or officers of companies should stress the limitations on the significance of profits computed on the basis of historical cost in periods of material changes in the purchasing power of money and that they should draw attention to the desirability of:

(a) setting amounts aside from profits to reserve in recognition of the effects of inflation
(b) experimenting with methods of measuring the effect of inflation on profits and on financial requirements. If the results of such experiments were published then the bases used for calculations and the significance of the figures should be stated clearly.'

2.3 *Publications by the Certified, Cost and Works Accountants and the Scottish Institute*

In 1952, the Association of Certified and Corporate Accountants (ACCA) published *Accounting for Inflation: a Study of Techniques under Conditions of Changing Price Levels* and the Institute of Cost and Works Accountants published *The Accountancy of Changing Price Levels.* Both these booklets advocated the use of replacement cost accounting.

In 1954 the Council of the Institute of Chartered Accountants of Scotland (ICAS) published a statement entitled *Accounting in Relation to Changes in the Purchasing Power of Money.* It acknowledged the limitations of historical cost accounting in a period of rapidly changing money values, and welcomed experiments with CPP accounting both in published and management accounts.

2.4 *Accounting for Stewardship* (*1968*)

A note appended to N15 in January 1954 indicated that the ICAEW, ICAS, ICAI, the Society of Incorporated Accountants and Auditors, and ACCA had met but could not agree on the appropriate form of any future action.

There then followed several years of relatively low inflation and not surprisingly interest in the subject diminished appreciably. Nevertheless ICAEW committees continued to consider the problem and in 1968 its Research Committee published a book entitled *Accounting for Stewardship in a Period of Inflation.* This book advocated the current purchasing power (CPP) method of inflation accounting and was powerfully to influence UK developments.

One of the principal figures advocating the need for inflation accounting in the 1950s and 60s was Ted Parker (now Sir Edmund Parker, CBE, FCA), senior partner in Price Waterhouse and president of the ICAEW in 1967/68. He recollects advocating CPP to an informal ICAEW Discussion Group in 1952 and gave a paper on the subject at the Eighth International Congress in New York in 1962. The Americans reached similar conclusions and the American Institute of Certified Public Accountants published in 1963 Accounting Research Study No. 6, *Reporting the Financial Effects of Price Level Changes* which advocated the CPP method (called in the USA General Price Level Accounting). It would be reasonable to assume that both Ted Parker and the AICPA were influenced by earlier writings on CPP, by, e.g., H. W. Sweeney, R. C. Jones and Perry Mason. The background to *Accounting for Stewardship in a Period of Inflation* was a long-standing and continuing debate on the pros and cons of historical cost versus replacement cost accounting. It was recognised that inflation, in the sense of debasement of the exchange (for goods and services) value of the currency, had become a major factor in increasing the general level of prices and that its cumulative effect made it urgent to secure agreement on some simple method of measuring, albeit roughly, what that effect was. The application of CPP to historical cost accounts seemed most likely to achieve that objective, not as an alternative to the adoption of replacement cost accounting but as a necessary step whether or not replacement cost accounting was ultimately adopted. (It is fair to add that few on the practising side of the profession liked the potential loss of objectivity which it was thought that the adoption of the replacement cost basis would involve and that fewer still saw much prospect of getting any early agreement on a complete departure from historical cost.)

3. Current purchasing power (1971 to 1974)

3.1 *The Benson Initiative*

The next phase of the development of inflation accounting in the UK started in March 1971 when Sir Henry Benson wrote to the President of the Institute of Chartered Accountants in England and Wales suggesting that the Institute should take the lead in the urgent consideration of the question of financial administration and accounting under inflationary conditions. The council responded by requesting the Accounting Standards Steering Committee to initiate discussions on inflation accounting with interested representatives of finance, commerce and industry including the Stock Exchange, the CBI, the Bank of England and the Department of Trade and Industry. This group became known as the ASSC Plenary Committee. A full list of its member organisations will be found in Appendix 1.

The plenary committee met under the chairmanship of Sir Ronald Leach in May 1971. There was general agreement that inflation accounting should be tackled as a matter of urgency. The meeting had before it a 'Discussion paper and fact sheet' which I had prepared entitled *Inflation and Accounts.* This was later published in the August 1971 issue of *Accountancy.* The paper advocated the CPP method of inflation accounting and gave an imaginary example of its application. It discussed the type and size of companies to whom the method would apply, the starting date for the translation from £H to £CPP, the question of audit, and explanation and comment by directors. Information was provided on the rate of inflation in the UK and elsewhere, estimates of the effect of inflation on company profits in the UK and USA, and company practice in the UK, USA and elsewhere.

At this meeting Sir Henry Benson said that inflation accounting was a problem not only for the accounting profession but also for:

(a) Government (because of taxation, the nationalised industries, Government contracts, etc).
(b) Industry (no one would want to go it alone —it would affect depreciation, dividends, fixed price contracts, etc).
(c) The City (presentation of historical cost figures in prospectuses could be possibly misleading).
(d) The Unions (to whom historical cost accounting presented a misleading picture).

He suggested that the Government should set up some form of enquiry.

The plenary committee met again in July 1971. Action by the ASSC was deferred pending clarification of the Government's attitude to an official enquiry. The plenary committee met again in December 1971. At that meeting a senior Department of Trade and Industry official stated that while not ruling out possible future action it was the Government's opinion that the accountants and other interested parties should be left to pursue the matter at this stage.

3.2 *The ICAEW Summer Course*

The ICAEW Summer course in 1971 was held at Churchill College, Cambridge and was entirely devoted to Inflation Accounting. It was chaired by Mr (now Sir) Edmund Parker, who was also a speaker. Other speakers included Professor F. W. Paish; Mr. H. Vermeulen of NV Philips, Holland; Professor G. H. Lawson; Professor E. Stamp; Mr. E. Weiss of Tube Investments Ltd; and Mr. C. W. McMahon of the Bank of England. A full report of the conference appears in the October issue of *Accountancy* and there is an article by W. E. Parker based on his paper at the conference in the December issue. *Accountancy*'s summary of the conference states: 'Exponents of the various methods that have been suggested for dealing with this problem spoke more or less convincingly—the consensus of opinion afterwards was that the price index system [CPP] was preferable to replacement cost accounting'.

3.3 *Drafting ED8*

Meanwhile a sub-committee of the ICAEW Technical Committee was busy drafting an exposure draft on inflation accounting. This Committee was chaired by Gordon Hunter (its membership is set out in Appendix 2). This sub-committee had agreed with its parent to follow the CPP method before I became its secretary in April 1971. This decision was perhaps not surprising in the light of publication of *Stewardship* in 1968 but I found the decision a little strange in the light of my own experience. Prior to joining the Institute's secretariat I had been working for the Centre for Inter-Firm Comparison and then Associated Industrial Consultants. At CIFC we had been concerned to measure companies' efficiency in general and their return on assets in particular. In order to do this we had asked companies to revalue their assets and calculate their depreciation on a replacement cost basis using specific indices calculated by the Economist Intelligence Unit. We had found that this approach was well understood by our clients in industry who accepted the results as being relevant to their managerial decisions. We had never experienced any demand for a general price level or CPP adjustment approach.

As a new member of the secretariat I was in no position to suggest that the committee should reconsider its basic decision and I took the view that any form of inflation accounting was better than none. I felt that the ICAEW should do more than merely draft an exposure draft on the subject and I suggested to the ICAEW technical director, Michael Renshall, that I should initiate work in three other areas. He agreed with my suggestions and left me a very free hand to implement them.

3.4 *Field Testing*

My first concern was whether the proposals which were being evolved by the drafting sub-committee were practicable. Accordingly I recruited a group of companies to 'field test' these draft proposals as they emerged and to let me know:

(a) whether there were any practical difficulties that they could envisage in implementing them;
(b) whether there were any areas uncovered or containing ambiguities;
(c) what the impact of the method would be on their profit.

The comments of this gradually growing group of field testers were extremely useful in producing both the exposure draft, the standard and the working guide. (Some of the results of the field test were published in *Accountancy* in August 1975.)

3.5 *Impact of CPP on Reported Profits*

My second concern was whether the results of the CPP method would make any material difference to companies' reported profits. It was conceivable that whilst the method might reduce profit, if it were to reduce all companies' profits by the same or a similar percentage, then users, and even more so producers of accounts, would consider the exercise a waste of time and money. Accordingly I approached Henry Cottrell of Phillips & Drew, whom I had met whilst organising an inter-firm comparison for stockbrokers, and asked him if it would be possible for his staff to calculate the effects of the CPP method on major quoted companies. The results of this approach were that Richard Cutler, a member of Phillips & Drew's staff, and I evolved a method of estimating the CPP results of quoted companies. This method was then applied to Phillips & Drew's 'Equity Book Companies', and Richard Cutler and I published the results in *Accountancy* in March 1973. We showed for over 200 named quoted companies what our estimates of the effect of the CPP method would be on their published profit. We also speculated on what the effect of this might be on:

(a) the companies' share price if the PE ratio was 'correct' or
(b) the PE ratio if the companies' share price was 'correct'.

A brief and somewhat sensational summary of the article appeared in the *Sunday Times* which certainly contributed to achieving one of my aims—namely to get the subject of inflation accounting thought about by senior management and a wider public than just a small group of accountants.

3.6 *Working Guide*

My third concern was that if the exposure draft which we were working on should become a standard then companies which would be involved in implementing it should have practical guidance easily to hand to help them do so. Accordingly I started to draft what became *Accounting for Inflation: a Working Guide to the Accounting Procedures* which was published in 1973. Along with drafts of ED8, I circulated drafts of this guide to the field testing companies. Their comments were invaluable in making sure that the working guide would actually work.

3.7 *CBI Involvement*

Early in 1972 the CBI set up an inflation accounting committee under the chairmanship of Sir David Barran. It published an interim report and a final report both in 1973. Both reports supported the work of the ASSC in its recommendations for CPP accounting.

3.8 *Publication of ED8: 'Accounting for Changes in the Purchasing Power of Money' (May 1952)*

In November 1972 the plenary committee met and supported the publication of an exposure draft on accounting for changes in the purchasing power of money. The exposure draft itself (ED8) was published on the 17 January 1973 and was open for comment until the 31 July 1973.

3.9 *The Government Intervenes*

Shortly before the expiration of the exposure period of ED8, some of us who were concerned with the development of inflation accounting at the ICAEW (Douglas Morpeth, Michael Renshall and myself) were summoned to the Department of Trade and Industry and told that the Government had decided to set up an independent committee of enquiry into inflation accounting. After the Government's previous attitude of leaving the development of inflation accounting to the accounting profession this announcement came as a bolt from the blue. Whilst the accounting profession would have welcomed Government involvement at an earlier date (indeed we had asked for it) Government's intervention at this eleventh hour appeared to be very unfortunate. Whatever advantages this intervention later had, it in fact set back the development of inflation accounting in the UK by a minimum of two years, and some would argue for at least seven years.

One can only speculate as to what the motives of Government were for setting up the enquiry. Inflation accounting had been debated in Whitehall since at least 1971 but the publication of ED8 focussed thought on the issue. One school of thought would have preferred to remain with historical cost accounting. It felt uneasy that indexation in accounts might cause people to question the value of money, undermine the money illusion, and enhance inflationary expectations at a time when it was felt necessary to restrain increases in prices and incomes. Indexation would also raise problems in the area of taxation—not only company taxation, but capital gains tax and personal allowances.

Another school felt that Government should become more involved as had been suggested by Sir Henry Benson and in the Barran Report, but if it were to do so, then the matter should be investigated first over a wider field than had been possible by ASSC! Hence the inclusion in the Sandilands committee's terms of reference such matters as investment and management decisions, efficient allocation of resources, implications for taxation, etc.

It was appreciated that a committee would take time to report but it was felt that it was more important to get the right answer. It might be too cynical to suggest that, as the Treasury were the biggest beneficiary from inflation, in that the real cost of Government borrowing was being eroded by inflation, they were the least keen to see this phenomenon quantified. It is unfortunate that the need for such speculation has not been removed by the publication of the key documents within the DTI and the Treasury leading up to the decision. It is highly desirable that such documents should be published as soon as possible.

In September 1973 the plenary committee of the ASSC met again following the DTI announcement of the independent committee of enquiry. ASSC stressed its sense of the urgent need for action and proposed that ED8 should be converted into a provisional standard. The CBI indicated its support for this suggestion.

Francis (now Sir Francis) Sandilands, chairman of Commercial Union Assurance, was invited by the then Chancellor (Tony Barber) and Secretary of State at the DTI (Peter Walker) to chair the proposed committee. He accepted on condition that he be allowed to comment on the terms of reference and to agree the membership of the

Table 3
Attitude to Inflation Accounting

	In favour	*Not in favour*	*Position not clear*	*Total*
Representative bodies	17	—	—	17
Companies	21	2	1	24
Public practice	12	—	—	12
Technical advisory committees	14	—	2	16
Individuals	23	1	1	25
Academics	11	—	—	11
	98	3	4	105

committee. All those who were invited to join it accepted. The committee was appointed in December 1973, with a secretariat provided by the Treasury and DTI.

The setting up of the committee of enquiry left the ASSC in a dilemma. Should it proceed with converting ED8 into a standard and risk being accused of prejudging the results of the Government enquiry or should it wait for the results of the Government enquiry and be accused of failing to provide much needed guidance in a period of high inflation? ASSC decided on a compromise, i.e. to issue a provisional standard rather than a full standard.

3.10 *Reaction to ED8*

113 comments were received on ED8. This was the third highest number of comments received on an exposure draft to date. (ED1—Associated Companies—had received 152 comments, and ED6—Stocks—received 150 comments.) The 113 comments were received from the following categories (numbers in brackets refer to those included in the preliminary analysis):

Practising firms	13 (12)
Limited companies	27 (24)
Representative bodies	19 (17)
Individuals	37 (36)
District societies	17 (16)

The comments occupy about 500 pages and are on public record. I carried out a preliminary analysis of them for the ASSC which showed:

(a) general support for inflation accounting (including support from CBI and Stock Exchange) (see Table 3);
(b) a division of opinion between CPP, replacement cost accounting, and other methods, with a majority in favour of CPP;
(c) practising firms tended to support CPP;
(d) only a third of companies supported CPP but the remaining two thirds were divided between replacement cost accounting and other methods (see Table 4).

In the light of this analysis I suggested to ASSC that:

(a) they should require companies to produce inflation accounts but
(b) the choice of method should be left to the companies concerned.

Table 4
Method Preferred

	ED8	*Replacement Cost Accounting*	*Other*	*Total*
Representative bodies	11	2	1	14
Companies	6	7	8	21
Public practice	8	2	2	12
Technical advisory committees	12	—	1	13
Individuals	12	9	4	25
Academics	3	4	1	8
	52	24	17	93

This approach would enable the relative merits of CPP and replacement cost accounting to be tested in the market place of producers, users and auditors. I felt that there was not sufficient support for either CPP or replacement cost accounting for the ASSC to make either mandatory.

This advice was rejected by the ASSC on the grounds that:

(a) an accounting standard should lay down only one method;
(b) CPP was a clearly described system (in ED8 and elsewhere) whilst replacement cost accounting was in fact a family of systems and poorly documented publicly.

ASSC therefore decided to publish a non-mandatory provisional statement of standard accounting practice No. 7: *Accounting for Changes in the Purchasing Power of Money* which was substantially the same as ED8.

3.11 *SSAP 7: Accounting for Changes in the Purchasing Power of Money (May 1974)*

SSAP 7 applied to the published annual accounts of listed companies but was recommended as good practice to all businesses. It proposed that the conventional accounts should be supplemented by a statement showing the results for the year and the financial position at the end of the year restated in terms of pounds of purchasing power at the end of the year. The restatement was to be made by the use of a general index. Companies were asked to explain in the notes how they had arrived at the figures and auditors were requested to report on the statement. In the UK the general index recommended was the retail price index because of the frequency and speed with which it was published. The provisional Standard came into effect with accounts *beginning* on or after 30 June 1974.

3.12 *The Need for Replacement Cost Accounting as well as CPP Information*

I was not completely happy with ASSC's decision and continued to argue for the addition of replacement cost transfers to CPP statements (see 'Inflation Accounting: The Next Step?' *Accountants Weekly*, 24 January 1975).

Moreover, when Sandilands rejected CPP, I argued for the need to combine CPP and CCA (see 'Case for Combining Current Cost and CPP Accounting', *Accountants Weekly*, 10 October 1975, and 'Sandilands, PSSAP 7, but what now?', *Accountancy*, December 1975).

4. Current cost accounting (1973 to date)

4.1 *The Sandilands Committee*

Let us now return to the work of the Sandilands Committee. Its membership is set out in Appendix 3. I was appointed as its technical liaison officer in order to act as a link between it and the Accounting Standards Steering Committee. There were three accountants on the committee: Donald Chilvers of Coopers & Lybrand, Professor Walter Reid of the London Business School and Michael Inwards of Pye of Cambridge. None of the three had been involved in the process of producing ED8 and they were therefore relatively uncommitted to CPP accounting. Perhaps of greater significance was the fact that Michael Inward's company had recently been partially acquired by the Dutch company of Philips—long known as a major advocate and practitioner of replacement cost accounting and that A. J. W. S. Leonard, Group Treasurer of Shell, must also have been exposed to Dutch ideas on replacement cost accounting.

4.2 *ASSC Submissions*

The ASSC made a number of submissions to the Sandilands committee (the three with TR numbers have been published):

(a) 'Submission to the Inflation Accounting Committee by the ASSC', April 1974. (TR 129)
(b) 'Towards a Reconciliation of Historical Cost Accounting, Current Purchasing Power Statements and Replacement Cost Accounting', August 1974.
(c) 'A Note on LIFO, FIFO, Base Stock, and Current Purchasing Power Supplementary Statements', October 1974. (TR 148)
(d) 'A Review of the Relationship between Historical Cost Accounting, Current Purchasing Power Statements, and Replacement Cost Accounting', October 1974. (TR 149)

The main thrust of the ASSC's argument was naturally in favour of CPP accounting. We also suggested that replacement cost accounting had a number of disadvantages and failed to measure all the effects of inflation.

Our arguments however seemed to have been of little avail.

4.3 *The Sandilands Recommendations*

Sandilands recommended a system of accounting which he christened Current Cost Accounting or CCA. The Sandilands Committee also specifically rejected the Current Purchasing Power (CPP) method advocated by SSAP 7.

The main features of CCA as set out by Sandilands were that:

1. Assets were to be shown in the balance sheet at their 'value to the business'—not as then at their cost or valuation. The Sandilands Committee defined in paragraph 219 the value to the business of an asset as its written down current replacement cost (current purchase price), except in situations where the written down current replacement cost was higher than both the 'economic value' (the discounted present value of the asset's expected future earnings) and net realisable value, in which case the value of the asset to the company was the 'economic value' or the net realisable value, whichever was the higher.

For land and buildings value to the business was to be arrived at by independent valuers. For plant, machinery and vehicles, value to the business was to be arrived at by using proposed new specific price indices for the industry in which the company operated—unless the directors of the company considered that a different basis of valuation was more appropriate.

The Government accepted the recommendation of the Sandilands Committee on the provision of these new price indices for capital expenditure on plant and machinery by major groups of industries, which made the adoption of CCA significantly easier. The publication of these indices altered significantly the balance of the pros and cons of current purchasing power and replacement cost accounting—of which CCA is a variant—in favour of replacement cost accounting.

2. Depreciation in the profit and loss account was to be calculated on the 'value to the business' of the fixed assets at the end of the year.

3. If the value to the business of a fixed asset was different at the end of the year from what it was at the beginning of the year, then any surplus or deficit was to be taken to reserve and not passed through the profit and loss account.

4. Should the value of assets rise during the year, then past depreciation would be inadequate. This 'backlog depreciation' was to be charged to reserve and not shown as a cost in the profit and loss account.

5. An attempt to eliminate so called 'stock profits'—the difference between what it would have cost to buy goods at the date of their sale and what it did cost to buy them at the date of purchase—was made in the CCA method by charging to the profit and loss account a 'cost of sales' adjustment. This was to be calculated by adjusting the value of the stock at both the beginning and at the end of the year to the average prices paid during the year. The cost of sales adjustment was to be used to increase a 'stock adjustment reserve' in the shareholders' equity section of the balance sheet.

6. In addition to the normal balance sheet and profit and loss account there was to be a new 'summary statement of total gains or losses during the year'. This combined the current cost profit (from the profit and loss account) with the holding gains (or losses) from revaluing fixed assets at the end of the year, and from the transfer of stock profits to reserve to give a total gain or loss for the year.

4.4 *Reaction to the Sandilands Report*

The main weakness of the Sandilands Report was to ignore the effects of inflation on monetary assets and monetary liabilities. This particular section of their report is very poorly argued and correspondingly unconvincing. It has been suggested that there was pressure from the Treasury to come to this particular conclusion. Sandilands strongly rebuts this suggestion: not only was there no pressure from the Treasury, but if there had been, his committee would certainly have completely ignored it. Sandilands himself has now been converted to the need to allow for the effect of inflation at least on trade debtors and creditors (see his 1978 Stamp Memorial Lecture at LSE entitled 'Inflation and Business Enterprise' in which he also supports the ICI gearing adjustment on total holding gains).

On the positive side the Sandilands Report had the following advantages:

(a) it put the case for replacement cost accounting very well;

(b) it suggested that the implementation of its recommendations should be left to a group to be set up by the accounting profession and to be partly financed by Government;

(c) it encouraged the Central Statistical Office to publish price indices. It was the absence of such indices on a widespread basis that had inhibited the development of replacement cost accounting so far.

The ASSC set up a committee under Sir William Slimmings (for membership see Appendix 6) to consider the Sandilands report. I acted as secretary to this committee whose report was endorsed by the ASSC and published by the Consultative Committee of Accounting Bodies. It gave a guarded welcome to the Sandilands Report but pointed out (again) that current cost accounting failed to measure all the effects of inflation on a company's results by ignoring the effects of inflation on: monetary assets and liabilities, shareholders' capital, comparisons over time, and so-called 'holding gains', and advocated a combination of CCA with an element of CPP in a statement immediately after the Sandilands statement of total gains comparing the change in the proprietors' interest, as measured by CCA, with the change required to maintain the purchasing power of that interest but 'if it proves that the time is not yet ripe for accounts prepared on that basis to be generally acceptable, we nevertheless consider it vitally important that a consensus be reached without delay on a generally acceptable method of demonstrating the effects of inflation in accounts, even if that method is not so comprehensive as some would wish. We think that a substantial improvement in the quality of information given in accounts should not be further delayed by the prolongation of a debate which has already gone on for too long.'

4.5 *Inflation Accounting Steering Group*

Sandilands recommended, and the Government and the accounting profession agreed, that the detailed implementation of the Sandilands Report should be left to the accounting profession which accordingly set up the Inflation Accounting Steering Group (IASG) in January 1976. Its task was to produce an exposure draft on Current Cost Accounting based on the Sandilands Report but taking into account comments made on the Sandilands Report by the accounting profession and others. The IASG was financed as to one-third by Government and two-thirds by major firms and companies. It recruited a qualified staff by secondment and I was appointed its Secretary. We produced our exposure draft (ED18) in time for it to be published by the end of November 1976.

4.6 *Decisions by the Inflation Accounting Steering Group*

The membership of the IASG is set out in Appendix 4. The IASG had a number of advantages in its task:

(a) a first class committee of able people;
(b) an energetic chairman (Douglas Morpeth) able to devote a substantial amount of time, energy and thought to the work of the committee;
(c) adequate finance;
(d) proper accommodation;
(e) seconded staff of a high calibre from major firms and companies;
(f) the direct involvement of the relevant Government departments (e.g. Department of Trade, Central Statistical Office, and the Government Accounting Service) enabled us to convey our needs rapidly to the right quarters of Government and also to be able to respond informally to problems as perceived by Government.

At the start of the work of the Inflation Accounting Steering Group we decided that we would endeavour as far as possible to cover all the practical problems raised by the introduction of current cost accounting. We felt that if we did not do so we should be open to the legitimate criticism that we were putting forward something which was not practicable. It was most important that the methods of CCA should be fully explained if CCA was to replace historical cost accounting. In order to make sure that our suggestions were workable we enlarged, with the help of the CBI and others, the group of field testers who had helped us with ED8 and SSAP 7 and sent them drafts of the proposals which became ED 18 as they emerged and sought the comments of these companies on them.

One of the major problems we faced was to reconcile the rejection by the Sandilands committee of the need for an allowance for the effect of inflation on monetary items with the view of the CCAB that such an allowance was necessary. The compromise we proposed, as an interim solution, was an appropriation account in which directors could set aside amounts to finance the increase in debtors due to inflation, or make allowance for the fact that the increased costs of stocks or fixed assets would be financed in part by creditors or other lenders.

With hindsight the timetable set for us by Sandilands and the ASC did not allow us enough time to produce a standard which was to be as comprehensive as we wanted ED18 to be, but we were as eager as they were to produce an exposure draft quickly as so much time had already been spent on the subject. This meant that amongst other things we were not able to give our field testers enough time to consider our proposals. Another disadvantage of the field testing system, which was perhaps inevitable, was that only companies who were really interested in the subject were willing to act as field testers. This perhaps gave us a favourably biased response to our proposals which was untypical of what turned out to be the view of industry as a whole.

The steering group set up several working parties charged with drafting different parts of the standard. As these parts came together it became apparent that ED18 was going to be a very long exposure draft, and we began to become apprehensive of the possible response to its size and complexity. We decided, in order to aid its reception by the commercial and business community as a whole, that we would produce a brief guide to its proposals. As events turned out, our apprehension was wholly justified! With the benefit of hindsight, we should perhaps have spent more time considering how to make ED 18 a more marketable proposal (e.g. by simplification). But with the years of delay which had already occurred, time for further consideration was the one thing we believed we had not got, and the general view at the time was that it would be better to have ED18 debated by a wider public than to continue with it in committees. Whenever it was published there would need to be a major debate.

Mindful of the desirability of international harmonisation of inflation accounting proposals we organised a conference on 12 and 13 July 1977 which was attended by representatives from Australia, Canada, Germany, Holland, New Zealand, South Africa, USA (FASB and SEC), and the IASC (France was invited but was unable to attend). A very useful exchange of experiences and views took place.

4.7 *ED18: Current Cost Accounting* (*November 1976*)

It was intended that the standard would apply to all accounts intended to give a true and fair view but in order to spread the workload on all concerned it was decided to divide the introduction *into four phases:*

1. Listed companies and other companies with turnover or assets in excess of £10 million: accounting periods beginning on or after 1 July 1978.
2. Other companies with turnover or assets in excess of £1 million: 1 January 1979.
3. All other accounts provided that turnover or assets was in excess of £100,000: 1 January 1980.
4. An appropriate method for small companies was to be developed in the light of experience: no commencing date for phase 4 was therefore set.

Under ED18 a company's annual accounts would include:

(a) Profit and loss account
(b) Appropriation account
(c) Balance sheet
(d) Statement of the change in the net equity interest after allowing for the change in the value of money.
(e) Statement of source and application of funds as laid down in SSAP 10.

The basic principles of ED18 were:

(a) the non-monetary assets of the business should be shown in the balance sheet at their value to the business at the balance sheet date. Value to the business would normally be replacement cost but in exceptional circumstances could be the higher of net realisable value and economic value (discounted present value) if both were lower than replacement cost.

(b) revenue should be charged with the depreciation of fixed assets calculated on their value to the business, and with the cost of stock consumed valued at its replacement cost at the date of sale.

(c) revaluation surpluses should be credited in the first instance to the appropriation account. Revaluation surpluses would arise mainly from the revaluation of fixed assets and from the difference between the replacement cost and historical cost of stock consumed.

(d) directors should appropriate out of the revaluation surpluses and, if necessary, out of current cost profit, an amount based on their assessment of the needs of the business including provisions for the effect of inflation on monetary items, gearing and backlog depreciation.

4.8 *Response to ED18*

I would like to stress that it was always our intention to modify ED18 in the light of comment. We were therefore very pleased at the high level of comments—the response to ED18 set a record in that approximately 700 written submissions were made to the IASG. Table 5 shows what the main criticisms of ED18 were. They can be summed up as follows: too complex; too subjective; too expensive; too rapid introduction. Table 5 also shows the numbers in each of the main groups making the criticism, and indicates which criticisms appeared to be of above or below average importance to the group.

Table 5

Analysis of Main Criticisms of ED18

		Source				
	*Number**	*Industry & Commerce*	*Financial Institutions*	*Public Practice*	*Academics*	*Other*
		%	%	%	%	%
ED18 approach is too *complex*	317 (3)	189 (60)	8 (2)	73 (23) ⊖	7 (2)	40 (13)
ED18 approach is too *subjective*	218 (6)	121 (55)	8 (4)	52 (24)	7 (3)	30 (14)
ED18 approach is too *costly*	183 (1)	102 (56)	3 (2)	45 (25)	1 (—)	32 (17)
Concern about how *smaller companies* could implement ED18	114 (2)	25 (22) ⊖	3 (3)	77 (67) ⊕	2 (2)	7 (6)
ED18 timetable too *rapid* because there is a need for *international* harmonisation	95 (1)	72 (76) ⊕	2 (2)	13 (14) ⊖	1 (1)	7 (7)
Need for acceptance for *tax* purposes prior to introduction of CCA	77 (7)	48 (62)	2 (3)	22 (29)	1 (1)	4 (5)
CCA *not useful*	65 (20)	36 (55)	1 (2)	13 (20)	1 (2)	14 (21)
ED18 timetable too *rapid* because there is insufficient knowledge of CCA techniques and the effects of CCA	54	27 (50)	1 (2)	17 (31) ⊕	1 (2)	8 (15)
CCA will be *inflationary*	37	16 (43) ⊖	—	11 (30)	—	10 (27)
Need for acceptance for *price control* purposes prior to introduction of CCA	27 (2)	21 (78) ⊕	1 (4)	3 (11) ⊖	1 (3)	1 (4)
Average percentage		56	2½	27	1½	13

⊕ = large variance *above* average
⊖ = large variance *below* average

*Figures in brackets indicate the number of commentors who specifically rejected such criticism.

Perhaps underlying all of the criticisms was the thought that historical cost accounting was being abandoned too quickly before CCA had been tried and tested.

The IASG published in May 1977 its response to these comments and indicated that it intended to:

(a) simplify its proposals by, e.g., placing more emphasis on the use of indices, omitting material on deferred tax and leases, etc.;
(b) produce simple guidelines for the smaller company;
(c) defer the implementation date;
(d) hold public hearings;
(e) make the CCA figures supplementary;
(f) improve the treatment of monetary items.

Our thinking on monetary items had progressed away from the appropriation account idea towards a 'gearing adjustment' similar to the one which later appeared in the Hyde guidelines except that it related to all the increase in revaluation reserve and not just to the extra depreciation and COSA. This move was influenced by a member of the IASG—Stanley Thomson of the Ford motor company which was considering making such an adjustment in their CC Accounts. Ford's in their 1976 accounts (signed on 4 March 1977), in the current cost appropriation account, retained in revaluation reserve only that part of the revaluation surplus for the year which related to assets financed by shareholders' net equity interest (see note 23 to the Ford 1976 accounts).

4.9 *Special Meeting of English Institute* (6 July 1977)

The IASG's proposals of May 1977 have been lost sight of as a result of the fact that two members of the English Institute (Mr. Keymer and Mr. Haslam) requisitioned a special meeting which considered the following resolution:

> That the members of the Institute of Chartered Accountants in England and Wales do not wish any system of Current Cost Accounting to be made compulsory.

The voting on the resolution was 15,512 (54.1%) for the resolution; 13,184 (45.9%) against the resolution. The membership of the Institute was about 64,000 at the time so only 45% voted. It is interesting to speculate on the characteristics and motives of those who voted. There is a transcript of the meeting, and the voting papers might be made available to a serious researcher. For what it is worth, my impressions, from listening to the special meeting debate, are as follows:

(a) Some of those voting for the resolution were using it as an opportunity to protest at what they regarded as the remoteness of the Institute 'establishment' from the concerns of (some of) its memberships (particularly the smaller practitioner and those in industry).

(b) Others felt that ASC's exposure draft process was a facade, and that without a vote for such a resolution, ED18 would be converted into a Standard with little amendment. (A totally false impression incidentally. The IASG was more than willing to listen to suggestions).

(c) Some did not believe that there was a need for inflation accounting, or if they did, then not for CCA.

(d) Some were still lobbying for CPP.

Messrs. Keymer and Haslam themselves objected principally to the mandatory aspect of ED18, and would prefer *all* standards (except SSAP2) to be only statements of 'best accounting practice'.

The result was close—it would have required only 1,165 (1.8% of the membership) to have voted the other way for the resolution to have been lost—but it clearly indicated that, despite our field testing and consultations with a large number of representative bodies, we had got out of touch with a significant proportion of our membership. Even if the voting had gone the other way, it will be remembered that ASC and IASG were committed to revise substantially ED18.

The Stock Exchange and the CBI expressed concern that the results of the ICAEW special meeting should not be allowed to delay further the introduction of some form of inflation accounting and a meeting between representatives of the Stock Exchange and the CBI was held with Sir William Slimmings and Douglas Morpeth to discuss a suitable approach.

As may well be imagined there were many meetings at this stage and we were fortunate at this critical juncture to have the statesmanlike qualities of Sir William Slimmings as chairman of ASC. Under his guidance, it was decided to proceed on two separate timescales: in the short term, simple guidelines were to be produced; in the longer term, ASC and IASG would work on producing an acceptable and workable system of price level accounting for promulgation as a standard.

Messrs Keymer and Haslam were invited to join a small business' working party of the IASG, but declined.

There was at the time a considerable amount of criticism of Douglas Morpeth, which he bore with fortitude. He never sought to blame others for what had happened. although many of us shared the responsibility for the decisions which had been taken. I think that when the Sandilands report was published many had not appreciated the full implications and thus Douglas Morpeth had to bear the brunt of the reaction to the Sandilands recommendations as crystallised in ED18.

Some members of the Association of Certified Accountants put up a resolution, similar to the Keymer/Haslam one, to the Association but were persuaded to hold it in suspense until the result of the ICAEW meeting was known. After that meeting I presume they felt there was no need to pursue the matter.

4.10 *ASC Statement of Intent*

Following the Special Meeting of the English Institute, the ASC issued a Statement of Intent in which it announced its plans to prepare simple guidelines for supplementing historical cost results, in conjunction with IASG, with information in respect of:

1. The cost of sales adjustment.
2. The charge for depreciation on a current cost basis.
3. An adjustment to take account of the effects of gearing.

ASC announced that it intended that these guidelines should be complete and issued in time for them to be capable of being used to supplement historical accounts wherever practicable for the year to 31 December 1977. After appropriate consultations, ASC said that it would seek means, with the Stock Exchange, the CBI and Government support, whereby at least all major companies would be encouraged to adopt the proposals in their next published accounts.

4.11 *Hyde Guidelines*

The ASC's *Interim Recommendations on Inflation Accounting* (the Hyde Guidelines) were published on 4 November 1977. The Hyde Guidelines proposed that all quoted companies, for accounts ending on or after 31 December 1977, should contain a prominent separate statement showing the financial results as amended by the adjustments described below:

(a) *Depreciation* (the difference between depreciation based on the current cost of fixed assets and the depreciation charged in computing the historical cost result).

(b) *Cost of Sales* (an adjustment for the difference between the current cost of stock at the date of sale and the amount charged in computing the historical cost result).

(c) *Gearing:*

   i. If the total liabilities of the business exceeded its total monetary assets, so that part of its operating capacity was effectively financed by the net monetary liabilities, an adjustment should be made to reflect the extent to which the depreciation and cost of sales adjustments did not need to be provided in full from the current revenues of the business in showing the profit attributable to the shareholders.

   ii. If the total monetary assets of the business exceeded its total liabilities, an adjustment should be made to reflect the increase in the net monetary assets needed to maintain its scale of operation.

It was anticipated that the gearing adjustment (c. ii. above) would assist the clearing banks in their desire to reflect the impact of inflation in their published accounts.

The essence of the Hyde Guidelines was that they were voluntary and gave considerable scope for the directors of quoted companies to apply their commonsense in solving the particular problems which their companies would face in implementing the Hyde Guidelines. It was considered that it would be premature to lay down detailed rules in an area where it was acknowledged that there was still considerable scope for experimentation and the gaining of knowledge from the confrontation of practical problems by those concerned with implementing the recommendations.

The Membership of the Hyde Committee is set out in Appendix 5. The secretarial support for the Hyde Committee was provided by the secretariat of the Inflation Accounting Steering Group. I had left the IASG to become technical director of the ICAEW following Michael Renshall's departure from that position to become a partner with Peat Marwick. My place at the IASG was taken by John Foyle who was seconded from Price Waterhouse and who had been with the secretariat of the IASG from its start.

It will be seen that three of the members of the Hyde Committee were also members of the IASG and much of its thinking on simplification was taken over into producing the Hyde Guidelines.

The Hyde Guidelines proved to be more acceptable to industry than had either of its main predecessors ED18 and SSAP7 (see Table 8), perhaps because they were simpler and shorter, but perhaps also partly as a result of the cumulative effect of the debate so far.

4.12 *Progress to ED24*

During the preparation of the Hyde Guidelines, the IASG had continued its work on producing a revised exposure draft on current cost accounting in the light of the response to the comments on ED18. The results of their deliberations were published in April 1979 as ED24. Not all of the time was spent on revising the draft; there was also considerable debate on the political desirability and timing of another exposure draft.

The authors of ED24 had obviously learned some of the lessons from the reaction to ED18. ED24 was a very much slimmer document than ED18. ED24 occupied 29 pages and its guidance notes only another 46 pages whereas ED18 had taken 107 pages and its guidance notes a further 278 pages (see Table 6). Part of this reduction was possible because ED24 required only supplementary CCA statements whereas ED18 and Sandilands envisaged the current cost accounts being the main ones.

Whilst ED18 contemplated a phased introduction of current cost accounting for all companies whose accounts were intended to show a true and fair view, ED24 limited itself to listed companies and those with a turnover in excess of £5 million. ED18 had required a current cost accounting profit and loss account and balance sheet. Monetary items were to be dealt with via an appropriation account. There was also to be a statement on the maintenance of the purchasing power of the equity capital which combined the valuation of assets on the current cost accounting basis with calculating profit on a CPP basis.

Hyde took a step forward by requiring the treatment of monetary items in the profit and loss account by means of a gearing adjustment but took a step back by not requiring a current cost accounting balance sheet. ED24 took one step further forward by requiring a current cost accounting balance sheet. It also split the treatment of monetary items between trade debtors and creditors on the one hand, which were to be dealt with in the profit and loss account by means of a monetary working capital adjustment, and longer term borrowings on the other hand, which were to be dealt with further down in the profit and loss account by means of a gearing adjustment similar in its arithmetic to the Hyde gearing adjustment.

ED24 placed much more emphasis on the use of price indices in arriving at the value of fixed

Table 6

Some Important Features of Various Inflation Accounting Proposals

Proposal	*SSAP7*	*Sandilands*	*ED18*	*Hyde*	*ED24*	*SSAP16*
Date of Issue	May 74	Sep 75	Nov 76	Nov 77	Apr 79	Mar 80
Length*	19 pp + 107 pp working guide	364 pp	107 pp + 278 pp guidance manual	9 pp	29 pp + 46 pp guidance notes	19 pp + 69 pp guidance notes
Scope	All listed companies	Listed + Turnover or assets more than £10 m + Nationalised Industries	Phased introduction for all companies**	Listed	Listed + Companies with turnover more than £5 m.	Listed + 4th Directive large***
Requirements	Supplementary CPP profit and loss account and balance sheet	CCA profit and loss account, balance sheet, and statement of total gains to be basic published accounts	CCA profit and loss account, balance sheet, appropriation account, statement of maintenance of purchasing power of equity capital	CCA profit and loss account	CCA profit and loss account and balance sheet	CCA profit and loss account and balance sheet plus (optional) statement of maintenance of purchasing power of equity capital
Operative date (accounting periods beginning or after)	30.6.74	24.12.77	Phase 1 1.7.78 Phase 2 1.1.79 Phase 3 1.1.80 Phase 4 No date	31.12.77	1.1.80	1.1.80

*An approximate indication only, especially as size of the pages quoted and the type faces used are different.

**Phase 1 listed plus turnover or assets more than £10 m. Phase 2 turnover or assets more than £1 m. Phase 3 turnover or assets more than £100,000. Phase 4 all other true and fair.

***If exceed 2 of: 1. Turnover £5 m. 2. Balance sheet total £2.5 m. 3. UK employees 250.

assets. In general ED24 was much more permissive in its treatment of the valuation of assets.

ED24 was able to achieve simplifications as a result of the IASG having more time at its disposal and by avoiding some of the more contentious issues tackled by ED18 such as deferred tax, leased assets, goodwill, backlog depreciation, etc., and by relegating much of the detail from the exposure draft to the guidance notes, some of which were very bland.

4.13 *SSAP16 (March 1980)*

SSAP16 was published at the end of March 1980—nearly ten years after work started on drafting ED8. It did not differ materially from ED24. The main changes were:

(a) exclusion from the scope of the Standard of non-listed companies smaller than the EEC's 4th directive large category;
(b) inclusion in the MWCA of that part of overdraft and cash which fluctuated with changes in the volume of stock, debtors and creditors;
(c) current cost accounts could be the main accounts provided adequate historical cost information is given as well;
(d) additional voluntary disclosure on
  i. the maintenance of the purchasing power of the equity capital;
  ii. the effect of inflation on comparatives.

Despite much controversy the ED24 gearing adjustment was not changed but alternative gearing calculations were permitted in the notes.

5. Lessons to be learned

It will be fairly obvious that we made a number of mistakes in out attempts to develop a method of inflation accounting in the UK in recent years. It is desirable that we should acknowledge what these mistakes were, in order that we may learn from them, and, it is to be hoped, avoid them in developing other accounting standards in the future.[4]

5.1 *Study of Company Practice*

Our first mistake was to start drafting ED8 on the basis of the CPP method. It would have been better to consider what companies were actually doing in their management accounts or their published accounts in response to the effects of inflation. On the basis of the information in the 1971 discussion paper and fact sheet, and my experience in industry, I believe that we would have found that those few companies which were doing anything were using some form of a replacement cost accounting.[5] If we had advocated this instead of advocating the CPP method then we would have had a better chance of convincing industry of the relevance of our proposals. The first lesson to be learned is that ASC should always start its work in any particular area with an examination in some depth of what companies are doing either in their published accounts or in their management accounts.

5.2 *Overseas Practice*

We were perhaps unduly influenced by the publications of the US official bodies on inflation accounting and paid too little attention to the work in Holland on replacement cost accounting and in several Latin American countries on practical inflation accounting. Whilst the situation has improved there is still too little exchange of ideas between national accounting standard-setting bodies.

5.3 *Users' Demand*

The third area where I believe there was a failure was in the lack of any clearly articulated demand from the users of accounts for specific inflation adjusted information. ASC is hampered in its work if it is not clear what the users of accounts want. Different users may well want different things, but in this area there was, and perhaps still is, a considerable doubt as to what users wanted or needed. Users of accounts are relatively poorly organised and at the time had no representative on ASC. (Subsequently I was pleased, as Technical Director of the ICAEW, to suggest that Martin Gibbs of stockbrokers Phillips & Drew should be invited to join ASC as a representative of one group of users.) The plenary group meets too infrequently to develop an opinion of its own. A strengthening of the users' position is desirable.

5.4 *Government Involvement*

The fourth area of failure was when the Government declined to become involved earlier in the evolution of an accounting standard. Conversely the Government's decision to set up the Sandilands Committee was a major blunder by the Government of the day. Although good eventually came out of the Sandilands Committee, its existence caused considerable delay in the production of an acceptable and usable method of inflation accounting. The recommendation in the Melville/Burney report on the Use of Accountants in the Civil Service in 1973 of the post of 'Head of the Government Accounting Service' and the appointment in November 1975 of Ken Sharp to the post, who holds a seat in his own right on the Accounting Standards Committee, should, it is hoped, prevent such a dual failure recurring.

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[4] See also *Setting Accounting Standards: a Consultative Document*, Accounting Standards Committee, 1978, and E. Stamp, *The Future of Accounting and Auditing Standards*, ICRA Occasional Paper No. 18, University of Lancaster, 1979.

[5] See also the results of the survey carried out by the Sandilands Committee into companies' inflation accounting methods on pages 258 to 299 of their report.

5.5 *Speed*

Our greatest failure was to act so slowly. The fact that it took nearly ten years to produce an acceptable standard on inflation accounting is little short of a scandal. Our slow progress compares very unfavourably with the reaction of, for example, the Inland Revenue in introducing stock relief (albeit a crude method of dealing with one of the effects of inflation) in the Finance Act 1975 with retrospective effect to 1 January 1973. ASC appears to me still to be acting unduly slowly as Table 7 illustrates.

Take leases as an example. The problem of this particular form of off balance sheet finance was recognised many years ago. (We capitalised leased assets at the Centre for Interfirm Comparison at least as early as 1966 and I put forward a suggestion for dealing with leases similar to ASC's current thinking in *Accounting and Business Research*'s first issue in Winter 1970.) Yet we still do not have from ASC even an exposure draft.

ASC has to reconcile the sometimes conflicting views of users, producers and auditors in order to produce a viable SSAP. This process must take time in order to enable those concerned to consider the issues, discuss them with colleagues, offer alternatives etc. But I question whether it need take as long as it sometimes does. This is of course not a problem unique to ASC. A comparison of its rate of progress and acceptability with that of the US's FASB and its predecessors might be illuminating.

While I would not wish to see the role of the Government in the establishment of accounting standards unduly expanded, some commentators have suggested that progress will not be made on certain critical reporting issues without legislative prescription or other government influence to assist the standard setting bodies. They believe that

> in addition to providing the broad backcloth to company accounting and disclosure, the Government should take a position on certain major accounting issues that have proved intractable of solution by the private sector. It must be recognised that on certain issues the interest of the preparers and users of accounts may be opposed and the impasse that arises in such circumstances may deny improved information to the users of accounts for protracted periods.
>
> Issues on which the Government should consider taking a position after due consultation include currency translation, goodwill, leases, pensions, related party transactions and current value accounting.[6]

5.6 *Education, persuasion and communication*

Possibly at the root of many of the other failures was a failure of education and persuasion. There was, and perhaps still is, the need to educate producers, auditors and users of accounts of the need for inflation accounting, the usefulness of the resulting information, how to produce it, and, the fact that, given the will, it is not too difficult to do so.

The responsibility for such education is not that of the accounting profession alone but must be shared by such bodies as the Stock Exchange, CBI, BIM, IOD, TUC, NEDO, and by government departments, financial journalists, etc.

The accounting profession does not appear to be geared to mount its share of the necessary substantial amount of education and persuasion needed. Communication between the Institute and its members, whilst it has improved enormously over the last 10 or 20 years, is still poor. Communication between members and the Institute is probably worse than in the opposite direction. The Institute should make far more effort to be aware of members' views and should use modern methods of market research to achieve this, and not rely only on the probably untypical minority who are involved in District Societies, invaluable though their work is.

5.7 *Comprehensive Approach*

Another of the root causes of our failure to act with sufficient speed was the constant desire to have a comprehensive approach to the problems. I think we would have got further faster if we had adopted a more *ad hoc* approach by tackling the major distortions caused by inflation in a piecemeal manner and building on the experience thus

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[6] From Arthur Andersen & Co's comments on the Green Paper on *Company Accounting and Disclosure*, December 1979.

Table 7
Time Taken to Produce Exposure Drafts on Certain Topics

ED No	*Topic*	*Date Drafting Commenced*	*Date ED Published*	*Date Standard Published*	*Time to Produce ED*	*Time to Produce SSAP*
8	CPP	June 1970	Jan 1973	May 1974	2y 8m	4y 0m
18	CCA	Jan 1976	Nov 1976	—	11m	—
21	Foreign currency	June 1975	Sep 1977	—	2y 4m	5y 2m**
22	Post balance sheet events	Nov 1976	Feb 1978	—	1y 4m	3y 9m**
23	Contingencies	Dec 1977	Nov 1978	—	1y 0m	2y 8m**
24	CCA	Dec 1976*	Apr 1979	Mar 1980	2y 5m	3y 4m
—	Leases	June 1975	—	—	5y 2m†	
—	Pensions	Dec 1975	—	—	4y 7m†	

*On basis work started as soon as ED18 was published.
†No ED yet published. Time to date of this paper (July 1980).
**No SSAP yet published. Time to date of this paper (July 1980).

gained. I would suggest that ASC should tackle problems in the following series of gradual steps rather than attempt a comprehensive solution in one bound:

1. Identify existence of problem (information on this will come from users, auditors, and producers, in that order; DOT reports of investigations may also be relevant). ASC has an adequate, albeit informal, supply of information in this area.
2. Ascertain current practice (The annual ICAEW *Survey of Published Accounts* is a help, but more needs to be done in this area.)
3. Ensure companies disclose their practice in the area in the notes to the accounts. Set out guidelines on what topics should be covered and what sort of information verbal and/or numeric should be disclosed. Step 3 may be all that is required or is possible.
4. Restrict the number of practices permitted in accounts to a few.
5. Establish a single practice as standard but tolerate deviations provided that the effect of them is quantified in the notes.
6. Establish a single practice as standard with deviations permitted only on grounds of (a) the overriding requirement to show a true and fair view, (b) practicality, or (c) materiality.

5.8 *Lack of Defined Goal*

Another problem besetting the Accounting Standards Committee, which has been highlighted by the production of an inflation accounting standard, is the lack of a defined goal. Elsewhere[7] I have attempted to set out what I regard as the major deficiencies of historical cost accounting in a period of inflation. Rarely however does ASC appear to tackle a problem by considering what the problem actually is. In the case of inflation accounting this lack of defined goal has led to considerable fruitless debate on the relative merits of CPP and CCA accounting, which are endeavouring to answer different questions. Accounting standards too often concentrate on the mechanics of producing figures with inadequate attention being given to what those figures are endeavouring to measure or mean.

ASC has commissioned research on a conceptual framework from Professor Richard Macve. The USA's difficulty in producing an agreed framework and the ASC's own attitude that such a task is virtually impossible is not, however, encouraging. I believe more progress could be achieved by tackling the problem at a more concrete and practical level, rather than at an abstract and philosophical one. More attention needs to be paid to what users do with accounts, what decisions they take as a result, and how users' decision making procedures could be made easier by amending either the information provided or the ways in which it is calculated.

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[7] See for example *Accountancy*, December 1975, *Accountants Weekly*, 10 October 1975 and *Professional Administration*, July/August 1979.

5.9 *Flexibility*

Another weakness highlighted by the development of inflation accounting was the belief that ASC should produce a standard permitting only one method at an early stage of development. In my opinion we would have proceeded more effectively if we had permitted a degree of flexibility within defined limits earlier in the process, for example by requiring inflation accounting but permitting a choice between CPP or replacement cost accounting.

5.10 *Resources*

Another root cause of the failure to introduce inflation accounting more quickly was a lack of resources. When I was first involved in the development of inflation accounting I was the only member of the ICAEW secretariat engaged on it, and I was able to devote no more than about half my time to it because I was also working on such matters as profit forecasts, *Accountants Digests*, and the inter-firm comparison for accountants in public practice. One of the benefits to spring from the Sandilands Report was that when we set up the Inflation Accounting Steering Group we were able for the first time in the development of inflation accounting to operate with an adequate number of staff. At the IASG we had seven qualified members of staff plus four secretaries. When I returned to the Institute as Technical Director one of the first tasks which I set myself was to increase the staffing of the Accounting Standards Committee to a more realistic level. I was able to increase the establishment of the ASC from one qualified man to four.

5.11 *Reasoning*

One of the common threads that runs through many pronouncements from the ASC (and other branches of the CCAB) is that the argument tends to proceed by assertion rather than by a process of observation of the needs and practices of the business world and a process of reasoning and explanation. I am sure that I am not alone in finding this irritating and unpersuasive, and I cannot but help contrasting it unfavourably with the methods of the natural sciences that I was brought up to follow before becoming an accountant.[8]

It was this thought that led me to suggest that the IASG should publish background papers to ED18 explaining our reasons for our proposals. I still believe that this was a useful step and hope that ASC will follow it for other exposure drafts and standards even though the reaction to ED18 was unfavourable. ASC has made some moves in this direction but by no means enough in my opinion.

5.12 *Speed versus Research*

Some of my suggestions may seem contradictory. For example I call for greater speed (5.5) but also more research (5.1 and 5.2) which will take time. However, the phased approach I advocate in 5.7 should enable the research to be carried out whilst at the same time users are at least obtaining some of the information they need. Moreover speed without adequate background research may be a case of 'more haste less speed'.

6. What companies did

Despite the vicissitudes described in this paper in developing an SSAP on inflation accounting the number of companies publishing inflation accounts has gradually grown (see Tables 8 and 9). Little is known, however, about how companies responded to the impact of inflation in their management accounts. What did companies do, when did they start, did it affect their ability to survive and prosper? Valuable research could be done in this area.[9]

7. Conclusion

1. I hope that the history section of this paper has not been too partial, and that others involved in the development of inflation accounting will remedy its deficiencies. I apologise to those whose undoubted labours have received inadequate, or no, mention. I am conscious for example of the inadequate refer-

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[8] I am grateful to Sir William Slimmings for drawing my attention to a very interesting article by A. M. C. Morison ('The Role of the Reporting Accountant Today', *Accountant's Magazine*, September and October 1970) on accounting standards. Mr. Morrison discusses, among other matters, the possible place for scientific method in developing accounting standards.

[9] Since originally writing this paper two studies have appeared: E. Whiting, 'User Management Research and CCA', *Accountancy*, May, 1980, and 'Inflation and Management Accounting', *Bank of England Quarterly Bulletin*, June 1980.

Table 8

Number of Companies Providing Inflation Accounts

Method	*Year to 30 June* *1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*
CPP	5	9	48	39	16	3	1
CCA	—	—	—	6	16	14	21
Hyde	—	—	—	—	—	106	140
Other	—	2	9	31	58	11	5
Total	5	11	57	76	90	134	167
Percentage of total number of companies surveyed	2	4	19	25	30	45	56

Source: Surveys of Published Accounts, ICAEW, annual.

ences to the work* of the CBI and Stock Exchange to get inflation accounting accepted. I have listed in the appendices the members of some of the committees working on inflation accounting in the period in order that they should get credit for the work which they did. It will be noticed that some names occur several times, and that the total number involved was small. The accounting and business community owes much to these few people.

2. I hope that the suggestions I have made for improving the standard setting process will be studied by those concerned (primarily but not exclusively the ASC) and will be acted on where possible. The successes and failures of the USA's FASB and its predecessors needs to be studied and allowance made for the significant differences between the two countries.

3. I have indicated some areas of further research. I hope that these will be explored and look forward to seeing the results published.

4. Comments on what I have said will be very welcome.

Appendix 1

Members of Accounting Standards Steering Committee Plenary Group (1971)

Chairman: Sir Ronald Leach

Members of ASSC (English, Scottish & Irish Institutes)

Liaison representatives from:

Association of Certified and Corporate Accountants
Institute of Cost and Works Accountants
Institute of Municipal Treasurers and Accountants
Stock Exchange
Takeover Panel

Table 9

Numbers of Companies publishing Inflation Adjusted Accounts

	Accounting periods ended during							
Method Used	*1973*	*1974*	*1975*	*1976*	*1977**	*1978**	*1979**	*1980*‡*
CPP	23	103	110	43	21	—	—	—
CCA	—	—	39	152	178	425	494	513
	23	103	149	195	199	425	494	513

(*Source:* Extel Statistics.)

These numbers cover all the companies included in the Extel series of cards. This series covers 3,500 of the companies listed on the London Stock Exchange. The ones excluded are those 'of too small potential' or of 'limited interest value'.

*Accounts published in year shown.
‡To 30 June only.

Society of Investment Analysts
Confederation of British Industry
Issuing Houses Association

Guests from:
Bank of England
Board of Inland Revenue
Department of Trade & Industry

Sir Henry Benson
Mr. W. E. Parker
Mr. G. N. Hunter

Appendix 2

Membership of ED8 Drafting Committee

G. N. Hunter, JP, FCA, Dearden Lord Annan Morrish (Chairman)
G. F. Appleton, FCA, Harmood Banner
G. Bar, FCA, E. S. & A. Robinson
F. E. Bleasdale, FCCA, Esso Petroleum
A. C. Essex, FCA, Pirelli General Cables
Professor D. L. Hally, BCom, PhD, ACA, Dublin
E. G. Hill, FCA, Retired
J. W. Margetts, FCA, Peat, Marwick, Mitchell & Co.
W. W. W. Martin, LIB, FCA, Southern Gas Board
J. Pearcy, CA, ICI
S. P. Wilkins, FCA, Deloitte, Plender, Griffiths & Co.

Appendix 3

Membership of the Sandilands Committee

F. E. P. Sandilands, CBE, MA (Chairman)
P. Shelbourne, Drayton Group (Deputy Chairman)
Lord Caldecote, Delta Metal
D. R. Chilvers, FCA, Coopers & Lybrand
Baron Feather, CBE, former general secretary of the TUC
M. A. Inwards, FCA, Pye Unicam
Sir Emmanuel Kaye, Lansing-Bagnall
A. J. W. S. Leonard, Shell International
C. M. Miles (Mrs)
M. P. Nolan, QC
Professor W. Reid, MA, FCA, London Graduate School of Business Studies
Professor Ralph Turvey

Appendix 4

Membership of Inflation Accounting Steering Group

D. S. Morpeth, TD, BCom, FCA, Touche Ross (Chairman)
I. Bowie, MA, CA, Peat, Marwick, Mitchell & Co.
R. C. M. Cooper, Department of Trade
I. F. H. Davison, BSc(Econ), FCA, Arthur Andersen & Co
Professor H. C. Edey, LLD, BCom, FCA, London School of Economics
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The Fundamental Character of Excess Current Income

Edgar O. Edwards

The significance of excess current income, a current value accounting concept, for the making and evaluation of business decisions intended to maximise profit over a finite planning period is not yet clearly recognised in either the accounting or the economic literature. The basic and independent character of that concept has too often escaped analysis in the vain search for objective proxies for Hicksian economic income and in the concentration on the superficial role of cash flows.

For the making of expansion decisions, approaches that focus on the discounting of dividends, earnings, or net cash receipts will yield technically correct choices, provided that suitable 'remainder terms' are defined. However, while these more customary approaches can be derived as transformations of the approach which discounts expected excess current income streams, the reverse is not possible. The information required for the customary approaches is not sufficient to determine dated excess current incomes. Hence, the excess current income approach is more informative, and in that sense more basic, than the more customary approaches.

It will also be argued that the additional information contained in the excess current income approach is logically essential to the derivation of the data required for other approaches. Hence, the excess current income approach is not only more informative but also essential to the logical derivation of alternative formulations. It follows that excess current income is an independent and fundamental concept, not a concept derived from either the dividend or cash flow formulations.

In addition it will be shown that the concept of excess current income is independent of Hicksian economic income, which is clearly subjective in nature. In particular, expected subjective incomes can be derived from expected excess current income streams (or from transformations of them), but the reverse is not possible. Hence, excess current income is not a proxy for subjective income but rather a concept that is independent of subjective income and fundamental to its determination. As excess current income is a current value accounting concept, it can be argued that Hicksian economic income is a function of an expected accounting income stream.[1]

I shall also try to show that the fundamental character of the expected excess current income concept in the making of expansion decisions reappears in the evaluation of such decisions. All of the information contained in excess current income for a period relates to objective events of that period. The comparison of these events *ex post* with their *ex ante* counterparts and the evaluation of deviations of actual from expected events is the essence of the learning process by which future decisions and the decision-making process itself can be improved. Any statement of expected objective events that includes less information than that needed to compute expected excess current incomes for expansion decisions must, by definition, contain less information as a basis for the evaluation of such decisions. Hence, evaluations based on incomplete statements of expectations can only be partial in character.

Certain simplifying assumptions will be made. Measurement problems are set aside so that past and present market values of assets and liabilities are known and future market values will be clearly disclosed with the passage of time. Moreover, there are no transactions costs and no differences between exit and entry prices; hence any basket of net assets having a given market value on a particular date can be exchanged for any other basket having the same market value on that date. There will be no changes in the general price level but specific prices may change over time. Firms and individuals can entertain expectations about future interest rates and future prices and quantities of inputs and outputs but in general they will not entertain the same expectations. Hence, the subjective values attached to the same basket of net assets by different decision-makers may differ and the subjective values attached by one decision-maker to different baskets of net assets having the same market value may also differ. Finally, the entrepreneur whose decisions are analysed seeks to maximise profit over a finite planning period in a tax free setting with no aversion to risk.

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[1] This argument was presented briefly in Edwards and Bell (1961, pp. 66–69) and in simplified form in Edwards (1978).

Maximising the present value of the excess current income stream

The first task is to define subjective goodwill, the variable to be maximised, as a function of the expected excess current income stream. While this may be intuitively acceptable, its logical construction is essential to the argument that this definition is not only possible but indeed fundamental in the sense that all other definitions of subjective goodwill can be derived from it. Of course, the argument has substantive merit only if it can be shown that the fundamental definition cannot itself be derived from its leading competitors.

The value of the resources which the firm can commit to its plan at the moment of decision is given by

$$M_0 = A_0 - L_0 \qquad (1)$$

where A_0 is the market value of the firm's assets and L_0 is the market value of the firm's liabilities. M_0 is therefore the net worth of the firm's owners, measured by the market value of its net assets.[2]

Any expansion path entertained by the firm will have associated with it a progression of expected net asset values each of which can be defined as

$$M_t = A_t - L_t \qquad (2)$$

and the expected change in net asset value over any period is

$$M_t - M_{t-1} = Y_t - D_t + O_t \qquad (3)$$

where Y_t is expected current income, D_t is expected dividends and O_t is expected new contributions of equity capital to the firm. Hence, expected current income is

$$Y_t = (M_t - M_{t-1}) + (D_t - O_t) \qquad (4)$$

where $(M_t - M_{t-1})$ is expected new commitments of values to the firm and $(D_t - O_t)$ is expected net transactions with shareholders. Equation (4) states, therefore, that expected current income is expected to be either committed to the firm or distributed to shareholders. It should be noted, however, that new commitments to the firm include not only net acquisitions of net assets but also net increases in the value of net assets while held by the firm during this period.

Excess current income for a period, E_t, can now be defined as the amount by which current income is expected to exceed what could have been earned by investing the firm's net asset value at the beginning of the period at the market rate of interest expected to prevail during the period. Hence,

$$E_t = Y_t - \underline{i}_t M_{t-1} \qquad (5)$$

In choosing its preferred expansion path the firm examines alternatives and assigns to each a subjective value. The excess of that value over the market value of the firm's net resources at the moment of decision is the subjective goodwill associated with that expansion path. Hence,

$$V_0 - M_0 = G_0 \qquad (6)$$

Moreover, the expected progression of the plan will entail the expectation that at any time within the plan period,

$$V_t - M_t = G_t \qquad (7)$$

Finally, the relationship now expected to prevail at the end of the plan period is

$$V_n - M_n = 0 \qquad (8)$$

The end of the plan period coincides with the firm's planning horizon beyond which the firm cannot now entertain expectations that it can do any better (or worse) than the market as a whole. Whatever the rate of interest will be after that point in time, the firm now expects only that it will be able to earn at that (unknown) rate on the expected market value of its net assets at the end of its planning horizon.

The subjective income associated with this expansion plan can now be defined, following Hicks (1946, p. 173), as 'the maximum amount which an individual can spend this week and still expect to be able to spend the same amount in real terms in future weeks.' For any period within the plan expected subjective income, S_t, is

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[2] The market value of the firm's shares of stock on the exchange may differ from this amount because those who demand and supply such shares on the exchange have their own subjective assessments of the firm's future and the value of its shares. The market price of the firm's shares balances these demands and supplies. The excess of the market value of the firm's shares over the market value of its net assets is an objective measure of goodwill, the market's judgment of the excess earning power of the firm (which may of course be negative). The market value of the firm's shares will influence management's financing decisions and hence its expansion plan, but the related measure of goodwill is not the subjective goodwill by which management chooses the firm's optimal expansion path. This objective measure of goodwill may, however, approach management's subjective goodwill, if management's performance matches management's expectations.

$$S_t = \underline{i}_t V_{t-1} = V_t + (D_t - O_t) - V_{t-1} \qquad (9)$$

i.e., if expected net dividends, $(D_t - O_t)$, equalled $\underline{i}_t V_{t-1}$, V_t would equal V_{t-1} and subjective value would be expected to remain unchanged over the period—the individual would expect to feel as well off at the end of the period as he does at its beginning.

The relationship between expected subjective income and current income can be established by subtracting from equation (7) its counterpart for $t - 1$ to yield

$$(V_t - V_{t-1}) - (M_t - M_{t-1}) = G_t - G_{t-1} \quad (10)$$

Adding net dividends to each of the first two terms and observing equations (4) and (9) yields

$$S_t - Y_t = G_t - G_{t-1} \qquad (11)$$

Hence any expected excess of current income over subjective income represents an expected decline in subjective goodwill. That excess is expected to take the form of market values, thus reducing the amount of subjective goodwill expected to be converted into market values in subsequent periods.

Excess current income can be reintroduced by subtracting $\underline{i}_t M_{t-1}$ from both concepts of income in equation (11). Then, as $S_t = \underline{i}_t V_{t-1}$, we can substitute $\underline{i}_t G_{t-1}$ for $S_t - \underline{i}_t M_{t-1}$, yielding

$$\underline{i}_t G_{t-1} - E_t = G_t - G_{t-1} \qquad (12)$$

Solving for G_{t-1} yields the following basic relationship:

$$G_{t-1} = \frac{E_t}{1 + \underline{i}_t} + \frac{G_t}{1 + \underline{i}_t} \qquad (13)$$

which, at $\underline{t} = 0$, the moment of decision, is

$$G_0 = \frac{E_1}{1 + \underline{i}_1} + \frac{G_1}{1 + \underline{i}_1} \qquad (14)$$

This definition of subjective goodwill is conceptually valuable for the evaluation of business decisions. It decomposes subjective goodwill into two components. The first,

$$\frac{E_1}{1 + \underline{i}_1},$$

encapsulates all of the objective events describing the expansion plan that are expected to occur in Period 1. The second,

$$\frac{G_1}{1 + \underline{i}_1},$$

is the expected net present value at the end of Period 1 of all of those plan-descriptive objective events expected to occur in all subsequent periods. We shall expand on this notion later in the paper.

Finally, by substituting in equation (14) successive values for G_{t-1} from equation (13)

$$\left(G_1 = \frac{E_2}{1 + \underline{i}_2} + \frac{G_2}{1 + \underline{i}_2}, \text{etc.}\right)$$

and setting G_n equal to zero from equation (8), we reach the following general formulation:

$$G_0 = \frac{E_1}{1 + \underline{i}_1} + \frac{E_2}{(1 + \underline{i}_1)(1 + \underline{i}_2)} + \cdots \frac{E_n}{(1 + \underline{i}_1)(1 + \underline{i}_2) \cdots (1 + \underline{i}_n)} \qquad (15)$$

The subjective goodwill associated with any possible expansion path is simply the present value of the expected excess current income stream associated with it. The expansion path chosen by the profit-maximising firm is the one whose subjective goodwill is the highest.

Equation (15) establishes subjective goodwill as the present value of a series of expected objective incomes each of which can be independently verified by reference to actual events when these transpire. Hence, subjective goodwill (and subjective income) is a function of expected excess current incomes. Subjective income, therefore, is a function of an accounting concept of income, not the other way around. Current income is in no sense a proxy for subjective income; it is a self-contained, independent summary of objective events. It is not subjective income which accountants should adopt as their ideal but rather current income and its related excess current income.

Transformations of the basic definition

Traditional methods for determining goodwill—discounting dividends or net cash receipts are the leading examples—can be derived from equation (15), but that equation cannot be determined from the information contained in the traditional equations. The demonstration of this establishes the fundamental and comprehensive character of the definition of subjective goodwill as the present value of the expected excess current income stream. For this purpose, it will simplify the presentation to utilise discount factors such that

$$\underline{d}_t = \frac{1}{(1 + \underline{i}_1)(1 + \underline{i}_2) \cdots (1 + \underline{i}_t)} \qquad (16)$$

Then equation (15) can be rewritten as

$$G_0 = \underline{d}_1E_1 + \underline{d}_2E_2 + \ldots \underline{d}_nE_n \tag{17}$$

In general excess current incomes can be divided into any two parts, P_t and $(E_t - P_t)$, without affecting the value of G_0. Hence equation (17) can be rewritten as

$$\begin{aligned} G_0 = {} & \underline{d}_1P_1 + \underline{d}_2P_2 + \ldots \underline{d}_nP_n \\ & + [\underline{d}_1(E_1 - P_1) + \underline{d}_2(E_2 - P_2) \\ & + \ldots \underline{d}_n(E_n - P_n)] \end{aligned} \tag{18}$$

Designate the remainder term in brackets, Z. It follows that subjective goodwill can be determined by discounting any part of excess current income provided that the amount Z, which is the discounted value of the excluded components of excess current income, is added to the discounted value of the components selected for direct discounting. If a meaningful expression for the remainder term, Z, can be defined, a workable and technically correct alternative definition of goodwill will have been derived.

The dividend transformation

Now substitute equation (4) into equation (5) to identify components of expected excess current income.

$$\begin{aligned} E_t = {} & (D_t - O_t) \\ & + (M_t - M_{t-1}) - \underline{i}_tM_{t-1} \end{aligned} \tag{19}$$

Let $P_t = (D_t - O_t)$ as a first transformation, a transformation to the stream of expected net dividends. Then equation (18) can be written as

$$\begin{aligned} G_0 = {} & \underline{d}_1(D_1 - O_1) \\ & + \underline{d}_2(D_2 - O_2) \\ & + \ldots \underline{d}_n(D_n - O_n) + Z_D \end{aligned} \tag{20}$$

where

$$\begin{aligned} Z_D = {} & \underline{d}_1(M_1 - (1 + \underline{i}_1)M_0) \\ & + \underline{d}_2(M_2 - (1 + \underline{i}_2)M_1) \\ & + \ldots \underline{d}_n(M_n - (1 + \underline{i}_n)M_{n-1}) \end{aligned} \tag{21}$$

This simplifies, by using from equation (16) the information that $\underline{d}_{t-1} = \underline{d}_t(1 + \underline{i}_t)$, to

$$\begin{aligned} Z_D = {} & (\underline{d}_1M_1 - M_0) + (\underline{d}_2M_2 - \underline{d}_1M_1) \\ & + (\underline{d}_3M_3 - \underline{d}_2M_2) \\ & + (\underline{d}_nM_n - \underline{d}_{n-1}M_{n-1}) \end{aligned} \tag{22}$$

Cancelling yields

$$Z_D = \underline{d}_nM_n - M_0 \tag{23}$$

and the dividend transformation becomes the familiar formula

$$\begin{aligned} G_0 = {} & \underline{d}_1(D_1 - O_1) \\ & + \underline{d}_2(D_2 - O_2) \\ & + \ldots \underline{d}_n(D_n - O_n + M_n) - M_0 \end{aligned} \tag{24}$$

The final 'dividend' must include the market value of the firm's assets at time $\underline{n}$.[3]

The main theme of this demonstration is (1) that the usual dividend formulation (equation (24)) can be derived from the excess current income formulation (equation (17)), and (2) that the reverse is not possible. One cannot infer from equation (24) any information on the timing of any of the expected events composing expected excess current incomes except net dividends. In particular the timing of new commitments to the firm, $M_t - M_{t-1}$, has been lost and cannot be reconstructed. The cancellations involved in the transformation are mathematically correct but information essential to the description of the firm's planned expansion path is jettisoned in the process.

Other transformations

The preceding transformation, and others, can be simplified by evaluating the present value of the term, $\underline{i}_tM_{t-1}$, in equation (19). First, equations (19) through (23) establish that the present value of $(M_t - M_{t-1}) - \underline{i}_tM_{t-1}$ is $\underline{d}_nM_n - M_0$. Substituting C_t for $(M_t - M_{t-1})$ and solving for the present value of the series, $\underline{i}_tM_{t-1}$, yields

$$\sum_1^n \underline{d}_t\underline{i}_tM_{t-1} = M_0 - \underline{d}_nM_n + \sum_1^n \underline{d}_tC_t.^4 \tag{26}$$

---

[3] This derivation also discloses that the usual dividend formulation must refer to net dividends or be based on the assumption that new contributions by owners are expected to be zero in every period. A transformation to gross dividends will require a different remainder term equal to the value of Z_D in equation (23) reduced by the present value of expected new contributions by owners.

[4] The present value of $(\underline{i}_tM_{t-1})$ can be evaluated directly. First, let $C_t = M_t - M_{t-1}$. Then $M_{t-1} = M_t - C_t$. Rewriting $\underline{i}_tM_{t-1}$ in the following form, $\underline{i}_tM_{t-1} = (1 + \underline{i}_t)\,M_{t-1} - M_{t-1}$, and substituting $(M_t - C_t)$ for the second term yields $\underline{i}_tM_{t-1} = (1 + \underline{i}_t)\,M_{t-1} - (M_t - C_t)$. Take the present value of this expression using as before

$$\underline{d}_t = \frac{1}{(1 + \underline{i}_1)(1 + \underline{i}_2)\ldots(1 + \underline{i}_t)}$$

and the relationship $\underline{d}_{t-1} = \underline{d}_t(1 + \underline{i}_t)$.

$$\begin{aligned} \sum_1^n \underline{d}_t\underline{i}_tM_{t-1} = {} & (\underline{d}_1(1 + \underline{i}_1)M_0 + \underline{d}_2(1 + \underline{i}_2)M_1 + \underline{d}_3(1 + \underline{i}_3)M_2 \\ & + \ldots \underline{d}_n(1 + \underline{i}_n)M_{n-1} - \text{PV of } M_t + \text{PV of } C_t \\ = {} & (M_0 + \underline{d}_1M_1 + \underline{d}_2M_2 + \ldots \underline{d}_{n-1}M_{n-1}) \\ & - (\underline{d}_1M_1 + \underline{d}_2M_2 + \ldots \underline{d}_{n-1}M_{n-1} + \underline{d}_nM_n) \\ & + \text{PV of } C_t \\ = {} & M_0 - \underline{d}_nM_n + \sum_1^n \underline{d}_tC_t \end{aligned}$$

Table 1

The Composition of Excess Current Income

Components			*Flow Concepts*	
	$(D_t - O_t)$	Net dividends	= Net dividends	
C_t	$+ (I_t - B_t)$	+ Owner financed net investment	= Current operating profit	$= \text{COP}_t$
	$+ J_t$	+ Current cost depreciation	= Net cash flows	$= R_t$
	$+ (H_t - J_t)$	+ Net appreciation	= Current income	$= Y_t$
	$- \underline{i}_t M_{t-1}$	− Optional income	= Excess current income	$= E_t$
	$= E_t$			

Using the information in equation (26), we can now redefine subjective goodwill in the following way:

$$G_0 = \sum_1^n \underline{d}_t E_t = \sum_1^n \underline{d}_t (D_t - O_t) + \sum_1^n \underline{d}_t C_t - \left(M_0 - \underline{d}_n M_n + \sum_1^n \underline{d}_t C_t \right) \quad (27)$$

This simplifies, mathematically, to

$$G_0 = \sum_1^n \underline{d}_t (D_t - O_t) + (\underline{d}_n M_n - M_0) \quad (28)$$

which is simply a restatement of equation (24) in which, as was noted before, information on C_t has been dropped.

It will be helpful now to decompose C_t as follows:

$$C_t = M_t - M_{t-1} = (A_t - A_{t-1}) - (L_t - L_{t-1}) \quad (29)$$

The first term on the right, the change in asset value, can in turn be decomposed into two components—net investment (new acquisitions minus dispositions minus current cost depreciation), I_t, and holding gains arising from increases during the period in the market values of non-cash assets while they are in the possession of the firm, H_t^N. Similarly, the change in liabilities is equal to net new borrowing from creditors, B_t, less holding gains arising from reductions during the period in the market values of liabilities while owed by the firm, H_t^L. Amalgamating holding gains on assets and liabilities yields the following definition of new commitments to the firm:

$$C_t = I_t - B_t + H_t. \quad (30)$$

An alternative definition in which all valuation changes are collected together can be obtained by adding and subtracting current cost depreciation, J_t, thus showing investment gross of depreciation, as follows:

$$C_t = (I_1^g - B_t) + (H_t - J_t) \quad (31)$$

Excess current income can now be shown to be composed of the building blocks shown in Table 1.

The table also discloses the essential relationships between excess current income and selected intermediate concepts, namely, net dividends, current operating profit (earnings), net cash flows, and current income.[5]

As subjective goodwill is the present value of the expected excess current income stream, any determination of subjective goodwill which focuses on another flow concept must be composed of two parts, namely (1) the present value of the flow concept in focus plus (2) the present value of the components excluded from the concept in focus but which must be added to adjust that concept to excess current income. Hence, for example, subjective goodwill can be defined as the present value of current income less the present value of optional income or as the present value of net dividends plus the present value of new

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[5] The relationships disclosed in Table 1 imply, of course, consistency between appropriately formulated income and comparative position statements, namely statements in which net appreciation and current values are reported. Consider, for example, the following sketch (in which revenues and expenses are assumed to be cash):

$$\begin{array}{rl}
 & \text{Revenues}_t \\
 & \underline{- \text{Expenses}_t} \\
= & R_t \\
 & \underline{- J_t} \\
= & \text{COP}_t \\
 & \underline{+ H_t} \\
= & Y_t \\
 & \underline{- (D_t - O_t)} \\
(A_t - A_{t-1}) - (L_t - L_{t-1}) = & M_t - M_{t-1} \\
= & (I_t^g - B_t) + (H_t - J_t)
\end{array}$$

Table 2

Alternative Definitions of Subjective Goodwill

Focus	*Remainder Term, Z*
$G_0 = \sum_1^n \underline{d}_t E_t$	$+\ 0$
$= \sum_1^n \underline{d}_t Y_t$	$+ \left(\underline{d}_n M_n - M_0 - \sum_1^n \underline{d}_t C_t \right)$
$= \sum_1^n \underline{d}_t R_t$	$+ \left(\underline{d}_n M_n - M_0 - \sum_1^n \underline{d}_t I_t^g + \sum_1^n \underline{d}_t B_t \right)$
$= \sum_1^n \underline{d}_t \mathrm{COP}_t$	$+ \left(\underline{d}_n M_n - M_0 - \sum_1^n \underline{d}_t I_t + \sum_1^n \underline{d}_t B_t \right)$
$= \sum_1^n \underline{d}_t (D_t - O_t) + (\underline{d}_n M_n - M_0)$	

commitments less the present value of optional income.

Table 2 summarises some of the alternative definitions of subjective goodwill showing in each case (1) the concept in focus and (2) the simplified remainder term which must be added to complete the definition.

The fundamental character of the excess current income approach

The definitions of subjective goodwill in Table 2 are mathematically equivalent, but their implications for the formulation and evaluation of expansion plans are in most cases very different. This stems from the fact that in most cases essential information is eliminated in defining the requisite remainder term. Only the first and fundamental definition,

$$\sum_1^n \underline{d}_t E_t,$$

has no remainder term. The definition requires for its formulation expectations about (1) net dividends, (2) new commitments to the firm, including net investment and holding gains, and (3) optional income.

The second definition, which focuses on current income, Y_t, does have a remainder term but as it includes information on C_t, new commitments to the firm, all M_t can be determined ($M_t = M_{t-1} + C_t$) and with expectations about the discount rate, which are required in all cases for the discounting process to be performed, optional incomes, $\underline{i}_t M_{t-1}$, and excess current incomes can be derived. This focus is, therefore just as complete as the fundamental definition.

The others fail this test if one looks only at the minimum information required and does not consider the process by which the information must be derived. Hence, the focus on net cash flows apparently requires no information about expected changes in value whether they stem from holding gains or depreciation; the focus on current operating profit (earnings) does require expectations about current cost depreciation, but apparently none about the timing and amounts of gains; and the focus on net dividends apparently requires no information about the timing and amounts of new commitments of any kind be they holding gains or new acquisitions. Hence, neither current income nor excess current income can be derived from the information offered in these three definitions of subjective goodwill.

The basic question, of course, is whether or not it is reasonable to assume that the remainder terms in these three cases can be determined without reference to expectations about new commitments, C_t, their components and their timing. I suggest that such an assumption is not reasonable and that analyses of business decisions which focus on net cash flows, earnings or net dividends are misleading in suggesting that expectations about the timing and amounts of changes in value can safely be omitted from consideration.

Consider the terminal value of the firm's net assets, M_n, the present value of which appears in every remainder term. If expectations about M_n can be formulated without reference to expectations about C_t or its net appreciation component, $H_t - J_t$, expectations about changes in value are not essential to the formulation of the firm's plan of expansion.

There are two conceptions that merit discussion. The first suggests that M_n should be defined as the present value of dividends, earnings or cash flows expected to arise after time $\underline{n}$. This possibility implies that $\underline{n}$ has been improperly defined and should be extended to embrace all periods for which expectations can be specified. Beyond its planning horizon the firm expects only to earn at the future rate of interest (whatever it will be) on the market value of its net assets at that time.

The second approach requires that an expectation of the market value of the firm's net assets at the planning horizon be formulated without reference to intermediate values. This does not violate the definition of the planning horizon and hence must be confronted on merit. Three points can be made.

First, if expectations about the market value of the firm's net assets at the distant end of the firm's planning horizon can be formulated, it is *possible* to frame expectations about intermediate market values. Such expectations need not be formulated for every intermediate point in time and it would be inefficient to attempt such an exercise. The firm may, however, identify certain decision points within its plan period at each of which the firm expects to assess progress, reassess other opportunities, and consider modifications in its plan. Framing expectations about market values, among other things, at such intermediate decision points would provide useful information for plan evaluations at these intermediate decision points.

Indeed, one would expect that such expectations would be most firmly held and most clearly specified for early as opposed to later decision points. Each decision point is an opportunity to modify the most recently formulated expansion plan. Expectations relating to later decision points are themselves subject to change as a result of evaluations expected to be undertaken at earlier decision points.

Second, the expected cash flows themselves can usually be decomposed into expected quantities and expected prices—and should be if expectations are to be properly evaluated. Indeed, it is certainly reasonable to assert that expectations concerning most cash flows are formulated as the product of expected quantities and expected prices.

Third, if the firm now plans that at each intermediate decision point it will dispose of some assets (including outputs), it is *necessary* for expectations to be formulated not only about the values of its dispositions and acquisitions but also about the values of those assets and liabilities that it plans to retain at each decision point. Otherwise, the optimal pattern of dispositions and acquisitions, and hence of cash flows, cannot be determined. A plan to dispose of some assets and liabilities and to acquire others at time $\underline{t}$ instead of at times $(\underline{t} - 1)$ or $(\underline{t} + 1)$ requires expectations about the values of these assets and liabilities at (at least) these three points in time.

Consider as a possible contra example the plan to buy a bond today and hold it to maturity (which coincides with the investor's planning horizon). An expectation about the bond's maturity value in monetary terms can be formulated. Moreover, given expectations about future discount rates, it is *possible* to frame expectations about intermediate values as well. Finally, the plan to retain the bond until maturity implies that opportunities to swap the bond for other investments at all intermediate decision points have been rejected. Hence, expectations about the market values of the bond at these intermediate decision points are *essential* for the formulation of the plan to retain the bond until its maturity.

I conclude that a plan formulated without reference to intermediate market values fails to specify an important class of expectations which is essential both to the formulation of the plan and to its evaluation at intermediate decision points. In particular, those approaches to plan specification which focus on the discounting of expected cash flows, earnings or dividends, as these are usually formulated, all suffer from the common defect that one or more components of expected intermediate changes in value are omitted from the expectations considered essential to plan formulation.

This defect is not a necessary consequence of the focus on cash flows, earnings or dividends. It rather stems from the way in which the appropriate remainder terms are usually defined. It is possible to define these remainder terms differently so that information about expected intermediate changes in value is retained.

Consider the term $\underline{d}_n M_n - M_0$, which is a common component of all remainder terms in Table 2. This can be rewritten to make expectations about C_t, new commitments to the firm, explicit. The expected market value of the firm's net assets at the distant planning horizon, if not independently estimated, must be the sum of the initial market value committed to the plan, M_0, plus all intermediate new commitments.

Hence,

$$M_n = M_0 + \sum_{1}^{n} C_t$$

It follows that

$$\underline{d}_n M_n - M_0 = \underline{d}_n \sum_1^n C_t$$

and, substituting in equation (28),

$$G_0 = \sum_1^n \underline{d}_t (D_t - O_t) + \underline{d}_n \sum_1^n C_t \qquad (32)$$

Defined in this way the remainder term associated with a focus on dividends clearly requires expectations about C_t, and the suggestion that terminal value, M_n, can somehow be determined without reference to intermediate values is avoided.

The failure of the usual formulations of net present value to make explicit expectations about intermediate changes in market values of assets and liabilities has meant that economists have not paid much attention to them in their analyses of project and expansion decisions.[6] This neglect has in turn led a number of accounting theorists to argue that because these decisions are based on *expected* cash flows, accountants should focus on the *measurement* of cash flows in order to facilitate the evaluation of the original set of expectations. Ijiri (pp. 57–58), for example, has recently argued that

> The basic reason for the development of cash-flow accounting stems from the serious gap in practice between the way in which an investment decision is made (generally based on cash flows) and the way in which its consequences are evaluated (generally based on earnings). As a result of this gap, managers make an investment decision based on forecasted cash flows, but they do not receive feedback on whether their cash flow forecasts were accurate nor whether their decision to go ahead with the project was a good one from the cash-flow standpoint.

Unfortunately for this line of argument, the mathematical accuracy of the cash flow approach to decision-making does not mean that expectations about cash flows can somehow be directly generated without reference to expectations about market values. When this essential connection is recognised, accounting theorists may redirect their energies to the measurement of all of the current events relating to the plan which have transpired since the plan was last reconstituted. In particular, this will entail measurements of changes in values of both assets and liabilities. Cash flows are necessary, but not sufficient.

The essence of evaluation

The evaluation of expectations and of the decision-making process entails much more than the evaluation of those expectations essential to the description of the firm's adopted plan of expansion. Among other things, the broader task requires the evaluation of expectations relating to discarded alternatives, and the identification of alternatives not previously considered.

The excess current income approach to the narrower task requires the temporal disaggregation of expected future events and permits (or is built up from) the disaggregation of each dated expected income by type of activity (holding being one) and transaction. Subjective expectations are considered to be formulated about dated future objective events. The events are objective in the sense that independent observers can measure them when the period in which they were expected to occur has transpired. The actual events may differ in many respects from the events originally expected to occur in that period. The identification and evaluation of these deviations is an essential part of the learning process through which the decision-making process can be improved.[7]

It is not, however, the task of evaluation to demonstrate that current income of the period in question has or has not been maximised. That is a very different task (although it may be of interest to decision-makers) from the evaluation of expectations because of the interdependence which probably exists between the expected current incomes of different periods.

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[6] The idea that expectations about cash flows might be formulated without reference to expectations about changes in values of *retained* assets and liabilities may have received (inadvertent) support from those economists concerned with project evaluation. Little and Mirrlees (pp. 7–11), for example, note the need to formulate expected cash flows from expected quantities and prices of inputs and outputs, but the need to assign expected values to retained assets and liabilities is not stated explicitly. They do count the terminal value of residual assets as one 'output' but do not discuss the role of intermediate values. Hicks (1946) devotes his Chapter XVI to the issue of price expectations and their effects on the timing of cash flow expectations. His discussion does imply expectations about intermediate market values of assets retained but his present values are derived from expected cash flows.

[7] The role of *ex post* income measurements in this learning process seems to have been overlooked by Hicks. He concludes (p. 179) that such measures 'are of no use to theoretical economists, who are trying to find out how the economic system works, because they have no significance for conduct.'

Consider the following transformation of equation (14):

$$(1 + \underline{i}_1)G_0 = E_1 + G_1 \tag{33}$$

The plan is intended to maximise G_0, but, given the expectation of the discount rate in period 1, $(1 + \underline{i}_1)G_0$ will also be maximised, and we can focus on the two components, E_1 and G_1.

E_1 is a list of all of the objective events essential to the description of the firm's plan that are expected to occur in period 1. All of the objective events expected to occur in subsequent periods have been encapsulated in the term, G_1.

Now, if management considers E_1 to be independent of G_1, the firm can attempt to maximise E_1 without expecting to prejudice its opportunities in later periods. It is more likely, however, that management would expect that price gouging or reneging on guarantees, activities which it might otherwise engage in, would affect subsequent opportunities unfavourably. Similarly, if the firm plans to introduce a new product in period 1, the management may choose to price it below the price that would maximise E_1 in order to increase G_1. Hence, the quantity it seeks to sell, the advertising expenditure it plans to make, or the guarantees it intends to offer in period 1, will be such that the sum of E_1 and G_1 is maximised, not either alone. If evaluation reveals that short-term income, E_1, was not maximised, it is nevertheless invalid to infer either that expectations were wrong or that long-term income, G_0, was not being maximised.[8]

Moreover, the appropriateness of disposition, acquisition and retention decisions cannot be assessed by reference to expected and actual events of one period alone. The appropriateness of the timing of those activities depends upon the values the activities might have generated if they had been displaced to other periods, perhaps especially to the period immediately before or to the one immediately after. Any full evaluation of such timing decisions would have to encompass all events falling within the firm's planning horizon.

Finally, the appropriateness of the composition of disposition, acquisition and retention activities depends also on the incomes that could have been generated with alternative sets of such activities. Hence, an evaluation of the appropriateness of decisions requires an assessment of both alternative temporal patterns and other activity opportunities. An evaluation of the expected events composing E_1 can contribute in important ways to this broader task, but its direct objective is much more limited in scope.

That objective is to evaluate those expectations associated with the chosen plan of expansion that relate to objective events of the most recent period. I have tried to show that one subset of those expectations relates to changes in value. To omit that subset from evaluation would be a serious disservice to decision-makers and to the learning process on which improved decision-making depends.

Conclusion

The mathematical convenience of determining present values by discounting expected future cash flows has the analytical disadvantage of suggesting that expectations about intermediate changes in value can be safely disregarded in both the making and evaluation of decisions. If indeed decisions were based only on expected future cash flows, then only information on actual cash flows would be required to evaluate those decisions.

I have tried to demonstrate that this argument is in error, that approaches which discount expected cash flows, dividends or earnings typically involve mathematical short cuts that drop economic information about expected changes in value which is essential to both decision-making and the evaluation of expectations.

The demonstration has entailed a definition of net present value (subjective goodwill) based on the discounting of expected excess current incomes which do include expectations about period to period changes in value. I have then shown that the more popular definitions can be derived from this one, but that it cannot be derived from the others because they have eliminated expectations about changes in value and these cannot be reconstituted.

The fundamental role of expectations about future excess current incomes in both the making and evaluation of decisions suggests that accountants should take seriously the task of measuring changes in value as they transpire. To focus more narrowly on the measurement of cash flows would seriously limit the usefulness of accounting data for the evaluation of expectations and the role which accounting data should play in the learning process through which the quality of decision-making can be improved.

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[8] Scapens (1978) appears to argue that his concept of economic profit (remarkably similar to E_t) will be maximised when G_0 is maximised and vice versa.

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Improving the Quality of Corporate Financial Disclosure

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In recent years several authors have attempted to examine the adequacy of the corporate financial disclosure published in annual reports (Cerf, 1961; Bradish, 1965; Singhvi and Desai, 1971; and Buzby, 1974). Based on their examinations each author has made, implicitly or explicitly, suggestions for improving the quality of financial disclosure contained in the annual reports of corporations. The objective of this paper is to point out the weaknesses of some of the assumptions underlying these studies and to propose an alternative approach to the problem of improving financial disclosure in annual reports.

All of the above papers are based upon the argument that improved disclosure is useful if it adds to the satisfaction of the financial analysts' needs. The reasoning that is usually provided for using the financial analysts' needs as a criterion for establishing the need and direction for improved disclosure is as follows.

Disclosure of financial information is made to security holders and other interested parties. Perhaps the most extensive users of the corporate annual report are professional financial analysts. Institutional investors have become a significant segment of the stockholder group. Furthermore, a great number of individual investors depend, directly or indirectly, upon professional financial analysts for investment advice. Thus the financial disclosure needs of the financial analysts are extremely important from the investor's point of view.

In addition, some authors have pointed out that the management of a corporation can benefit from responding to the needs of the financial analyst through improved disclosure. They argue that if analysts understand what is going on in a company they are more likely to have a favourable view. In a discussion of such advantages of improved financial disclosure, Horngren (1957, pp. 599–610) states:

> Analysts' recommendations influence decisions, and hence market prices. If analysts are kept well informed, the following is likely to occur:
>
> 1. Analysts generally will be more interested in firms that disclose as opposed to those which do not.
> 2. Analysts' favourable attitudes result in higher price earning ratio.
> 3. Well informed analysts are more prone to know what to expect in a company's performance. Such a situation militates against the wild fluctuations which arise from startling company news (e.g. Lukens Steel 1957 first quarter earnings).
> 4. Over the long run an individual company's stock price will be relatively higher. This tends to keep both the management and stockholders contented. It also enhances the future marketability of a subsequent issue of the company shares.

Thus, it is argued that the determination of financial disclosure needs of the financial analyst is important from an investor's as well as management's view. Once the information needs of the analyst have been established, one can measure the quality of existing financial disclosure by investigating the extent to which financial analysts' needs are being satisfied. Furthermore, recommendations to improve the quality of disclosure can be made on the basis that adoption of these proposed recommendations would result in higher satisfaction of the needs of the analysts. With these thoughts in mind, Bradish (1965) interviewed financial analysts representing security brokers, trust and loan departments of commercial banks, and insurance companies to determine the types of information they deemed inadequately disclosed. He also sought proposed solutions from the analysts which could correct these inadequacies. Based on these interviews, he suggested some possibilities for improving financial disclosure.

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Singhvi and Desai (1971) developed an index of disclosure which was primarily based on work done by Cerf (1961) several years earlier. The index consisted of 34 items of information which were used as the basis for a composite measure of the extent of disclosure of these items in annual reports. Weights were assigned to these items in order to note distinctions in their relative importance as indicated by security analysts who were interviewed. The extent of a company's disclosure was measured by adding the weights assigned to items included in its annual report. Using this approach they identified companies which had inadequate disclosure. They conclude that 'corporations which disclose inadequate information are likely to be: (a) small in size as measured by total assets, (b) small in size as measured by number of stockholders, (c) free from listing requirements, (d) audited by a small CPA firm, (e) less profitable as measured by earnings margin'. The implication of the findings of this study is that disclosure improvement efforts should be focused on firms having the above characteristics.

Buzby (1974) surveyed professional financial analysts to construct a detailed set of weighted disclosure criteria for each of 38 items or types of financial and non-financial information which might appear in an annual report. The set of disclosure criteria was then applied to a sample of annual reports to determine, among other things, the relative relationship between the importance of an item and its extent of disclosure. He goes on to conclude that there is room for improvement by disclosing those items for which this relationship is low.

Buzby (1975) studied the relationship between the extent to which selected items of information are presented in corporate annual reports and two company characteristics—the size of the company and its listing status. The extent of disclosure of these items in the annual reports was measured by a disclosure index similar to that used by Singhvi and Desai (1971). The results of Buzby's study indicate that 'the extent of disclosure in annual reports is positively associated with the size of a company's assets and not affected by listing status (p. 30)'. The implication of these results is that the disclosure improvement efforts should be focused on smaller firms.

Validity of the assumptions inherent in the above studies

All these studies, implicitly or explicitly, use a disclosure index (the sum of the weights assigned to items of disclosure included in a company's annual report) as a measure of the quality of a firm's financial disclosure. Implicit in the reasoning employed by the above authors are the following assumptions:

1. After utilising data systematically over time, financial analysts develop perceptions of the relative importance of types of information items. In other words financial analysts are assumed to possess a high degree of insight concerning their own usage of information.
2. The relative importance of an item of information to the financial analyst is the same regardless of what other items of information are available to him.
3. The relative importance of a disclosure item does not change over time.

The findings of any study are only as good as the assumptions upon which it is based. If accounting professionals and academicians are to rely on the findings of the above studies, the validity of these assumptions underlying them must be established.

There is a good deal of evidence which indicates that the validity of the first assumption is questionable. For example, Ashton (1974, p. 728) reports:

> Research has indicated that individuals (even experts) have poor insight into their own judgment process as described by mathematical models. Typically, the individual will be asked to assign weights to numerous pieces of data to indicate their relative importance to his predictions. Then such weights will be compared with weights supplied by the mathematical model. Generally, individuals overestimate the extent to which they utilize the less important cues and underestimate the extent to which they utilize the more important cues i.e., 'subjective' weights are much more evenly distributed across cues than are statistically derived weights.
>
> This could cause a problem if the user subjectively assigned a sizable weight to a cue (or cues) which he did not really use in his predictions. The accounting process might then supply him with data which he did not use; conversely, his failure to assign a sufficient weight to an important cue might result in that cue not being supplied to him. At least, identification of prediction models via multiple regres-

sion techniques and via self-report may result in quite different models.

The relevance of the above argument to this study is that financial analysts are likely to have poor insight into their own judgment process as described by mathematical models such as linear multiple regression techniques. If it can be substantiated that techniques such as linear multiple regression can describe successfully the judgment process of an individual, then the research cited by Ashton raises questions about the validity of the assumption that analysts possess a high degree of insight into their own usage of information. Previous research has indicated that linear models can be employed successfully to extract the judgment process of an individual. For example, Slovic, Fleissner and Bauman (1972, p. 285) state:

> Psychologists have found linear models to be remarkably successful in their ability to predict judgments of such diverse criteria as psychiatric diagnosis, malignancy of ulcers, job performance, and the riskiness and attractiveness of gambles. Political scientists have found linear models to be useful for describing the judicial decision process in workmen's compensation and civil liberty cases. Researchers interested in simulating financial and managerial decisions have independently discovered the value of linear models. For example, Bowman and Kunreuter successfully fitted linear models to decisions concerned with production scheduling, and Hester used regression analysis to develop a 'loan offer function' representative of the lending policy of a particular bank. [footnotes omitted]

Taken together the research cited by Ashton and Slovic et al indicates that decision makers, in general, lack insight concerning their own use of information.[1] Furthermore, based on a sample of stockbrokers and a sample of students, Slovic et al (1972) found that:

(1) Stockbrokers exhibited poorer insight concerning their own use of information than did the students.
(2) The longer a broker had been in the business the less accurate was his insight into weighting (assigning relative importance to different items of data) policy.
(3) There were substantial individual differences in the weights assigned to the same factor by different brokers.

These findings imply that investment decision makers do not possess a high degree of insight into their weighting policy. Furthermore different samples of financial analysts assign significantly different relative importance to some items of information. To illustrate this point, Table 1 below presents the weights assigned to selected items of information by the sample of analysts that participated in the Buzby (1975) study and the sample that participated in the Singhvi and Desai (1971) study.

It can be seen from Table 1 that there is a great variation in the relative importance assigned to different items of information by different sets of analysts. This lack of consensus over the relative importance of different items of information among analysts further questions the validity of using the above mentioned disclosure index as a measure of the quality of financial disclosure.

The second assumption implicit in the usage of a disclosure index as a measure of quality is that the relative importance of an item of information to the financial analyst is independent of other items of information available to him. This assumption is even more bothersome than the first one. It seems very unreasonable that the relative importance of a disclosure item to the financial analyst is the same regardless of what other items of information are available to him. To illustrate, suppose that analyst I is provided with a comparative balance sheet and income statement for a company while analyst II does not have access to this information. Now analyst I can compute a funds flow statement or the change in debt to equity ratio of this company while analyst II cannot. Thus it seems reasonable that receiving the information on funds flow or on the change in the debt to equity ratio would be of greater importance to analyst II than it would be to analyst I. The point to be made here is that the significance of any single disclosure item is related to the absence or presence of other disclosure items. This relates to the concept of substitute signals of information discussed by Gonedes (1976). Two items of information are substitute items if elimination (or absence) of one of them does not result in loss of information to the user. That is, as long as one of the two items is available, the disclosure of the second item does not provide any more information. This concept of substitute items of information has been ignored

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[1] See Slovic and Lichtenstein (1971) for a brief description of studies which further substantiate this point.

Table 1

A Comparison of Relative Weights Assigned to Different Items of Information by Different Samples of Analysts

	Study	
Item	*Weight Assigned by Singhvi & Desai (weight range from 1 to 4)*	*Weight Assigned by Buzby (weight range from 1 to 4)*
Discussion of major factors affecting future business	2	3.23
Description of tangible asset accounts and depreciation on summary	2	3.38
Description of major projects	1	3.37
Description of management	1	3.23

in the construction of disclosure indices in the above studies. For example, segmental sales data and segmental revenues data have been assigned equal relative importance in most of these studies. However, Collins (1974) states that:

> The predictive ability tests suggest that SEC product-line revenue and profit disclosures together with industry sales projections provide significantly more accurate estimates of future consolidated sales and earnings than do those procedures that rely totally on consolidated data. It is interesting to note, however, that earnings estimation procedures in which both segment revenue and segment profit margins were used performed only nominally better than did those procedures in which segment revenue and consolidated profit margins were used. If, in fact, there is some positive marginal cost to disclosing segment profit data, then one must question the utility of requiring segment disclosure beyond revenue figures.

The above evidence presented by Collins substantiates our contention that the contribution of any single disclosure item is dependent upon the absence or presence of other disclosure items. This consideration has been ignored in the research under review and redundant data seem to have been included in the construction of disclosure indexes. Not only may redundant data not have added to the quality of the overall financial disclosure system of a firm, it may even have made it harder to utilise all of the data disclosed. Dudycha and Naylor (1966) suggest that the addition of a redundant data source would impair the achievements of a decision maker. Along these lines Ashton (1974, p. 729) states that:

> ... the mere determination that a piece of data is relevant is not sufficient justification for including that piece of data in an accounting report. It is conceivable that the inclusion of numerous pieces of data might reduce the validity of the resulting prediction, even though each piece of data might bear some relation to the variable to be predicted. This situation is sometimes described as the 'information overload' phenomenon.

The third assumption implicit in the construction of a disclosure index is that the relative importance of a disclosure item does not change over time. Collins (1975) presents evidence to the contrary. Using seven prediction models and a sample of firms for 1968, 1969 and 1970, he constructed trading rule strategies to measure abnormal returns based on the presumption that the alleged superior ability of segment data based forecasts should anticipate security price changes better than consolidated forecasts. He found that segmental data were useful for anticipating security price changes during 1968 and 1969 but not 1970. He attributes this to the atypical economic conditions that prevailed during 1970. His evidence suggests that the relative importance of an information item is dependent upon economic conditions, and thus not stable over time. Along these lines, one may argue that a funds statement is more useful in times of rapid contraction or expansion than in relatively stable times.

A suggested approach

The objective here is to propose a methodology to evaluate the importance of different disclosure items to the analyst without relying on the above assumptions. The proposed methodology will provide a programme for obtaining maximum improvement in financial disclosure through a minimum number of additional disclosure items. The most important contribution of this methodology is that it can be used to determine whether providing the analyst with a new information item will eliminate his need for some of the items that are already being disclosed.

The information content of a new disclosure item is viewed as having two components. The first component is that information which is already being provided by one or more items; the second component is the additional information which this new item of disclosure will provide. A new disclosure item may have no second component; that is, it will leave the analyst with no more information than he had without it. However, disclosure of this item will be desirable if the cost of providing this item is less than the cost of providing the items that will no longer be needed. If the new disclosure item contains both components then not only will the new item give the analyst additional information, but it will also eliminate his need for those items which were providing the first component of information in the absence of this new item. Thus the net cost of this new financial item will be its actual cost less the savings that will be realised by eliminating the disclosure of those items which were previously the source of the first component.

This approach to the evaluation of a new disclosure item is definitely superior to the usual approach encountered in literature where a new information item is considered desirable only if it contains the second component. First, this approach can be used to explore the possibility of achieving a given quality of disclosure at a lower cost. Second, it can be used to attain improvement in the quality of disclosure at minimum cost by identifying the information items that will no longer have to be disclosed because their information content will be included in the new disclosure item.

Description of the methodology

In order to have an objective measure of the importance of different items of the disclosure to the analyst, his objectives for using these information items must be established. The one specific use of this information mentioned in the literature is its use in forecasting earnings per share (*EPS*). For example, Becker and McFarland (1968) report that:

> Earnings are the source of return to the stockholder on his investment and consequently profit expectations dominate investment decisions. Hence, the overriding objective of the security analyst is to forecast earnings per share.

Accordingly, the proposed approach will examine the impact of different disclosure items on financial analysts' ability to forecast earnings per share. The importance of a disclosure item will be measured by its power to explain the variability in the forecast error (*FE*) of the financial analysts.

Ideally, the knowledge of the forecaster's decision model would allow the identification of the appropriate measure of forecast error. Unfortunately no such model is available. Faced with the similar problem, Barefield and Comiskey (1975) proposed a measure of the forecast error very similar to the following:

$$FE_i = \frac{|{}^{A}EPS_i - {}^{F}EPS_i|}{{}^{F}EPS_i}$$

where

FE_i = forecast error in estimating *EPS* of firm *i*

${}^{A}EPS_i$ = actual *EPS* for firm *i*

${}^{F}EPS_i$ = forecasted *EPS* for firm *i*

The contribution of different items of financial information to the reduction of forecast error can be investigated by using the following linear model.

$$FE_i = B_0 + \sum_{j=1}^{m} B_j x_{ij} + e_i \quad \text{for} \quad i = 1, \ldots, n$$

or

$$E(FE_i) = b_0 + \sum_{j=1}^{m} b_j x_{ij}$$

where:

n = number of companies included in the sample

m = number of information items to be considered initially

$E(FE_i)$ = expected value of the forecast error for firm *i* (dependent variable)

$$x_{ij} = \frac{X_{ij} - \overline{X}_j}{S_{xj}}$$

X_{ij}'s are indicator variables for disclosure items (independent variables)

X_{ij} = 0 if disclosure item j is not reported in the annual report of firm i

X_{ij} = 1 if disclosure item j is reported in the annual report of firm i

$\overline{X}_j$ = mean value of the jth variable

S_{xj} = sample standard deviation of the jth variable

the *B*'s are fixed coefficients that express the relative importance of each X_j in explaining the variability in *FE*

e_i is the sum of unspecified factors, the disturbances, that are assumed to be normally distributed with zero mean and equal variance

b's are estimates of *B*'s from a sample of firms

The stepwise regression search method will be used to arrive at the set of disclosure items (independent variables) which best explains the variance in forecast error.[2] Essentially, this search method computes a sequence of regression equations. At each step, the stepwise regression routine examines which disclosure item is the next candidate for addition and then examines whether any of the items already in the model should now be dropped. This continues until no further disclosure items can either be added or deleted at which point the search terminates.

It should be pointed out that the stepwise regression routine allows a disclosure item, brought into the model at an earlier stage, to be subsequently dropped if it is no longer helpful in conjunction with disclosure items added at later stages. Thus this methodology will provide us with the smallest set of disclosure items which, as a group, enable financial analysts to maximize their forecast accuracy. Requiring companies to report this set of financial items will provide the greatest increase possible in the quality of financial disclosure. It should be emphasised that this set would only be a subset of the financial items that are considered desirable initially.

As mentioned earlier B's express the relative importance of each disclosure item, X_j, in explaining the variability in FE. Therefore their estimates, b's, can be interpreted as the relative importance of item X_j to the analyst. Such an interpretation is possible only if multicollinearity is not present. If we find that there is no significant multicollinearity, then the values of b's can be used to evaluate the objectivity of the weights used by Cerf, Singhvi and Desai, and Buzby.

Concluding remarks

Weaknesses inherent in some of the studies concerned with the quality of financial disclosure in corporate annual reports have been pointed out and an alternative methodology for looking into this problem has been suggested. The proposed methodology can identify the set of minimum number of disclosure items which are needed to maximise the financial analysts' forecast accuracy. In addition, the suggested methodology can provide an objective verification of the relative importance attached to different disclosure items in prior studies. Furthermore, the methodology can be used to determine whether providing the analyst with a new item of financial information will eliminate his need for some previously needed information items. This is an important step in attaining better disclosure at a minimum cost.

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[2] To investigate the possibility that different disclosure items might be desirable during periods of different economic conditions, several years should be studied.

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Walter Taplin Prize

The Association of University Teachers of Accounting, the Council of Departments of Accounting Studies and *Accounting and Business Research* offer a prize of £75 for the best article published in each annual volume. The prize is named in honour of the journal's founding editor, Walter Taplin.

The winning article is chosen by the subscribers. Their choice in 1978/79 was *Divisional Performance Measurement: Beyond an Exclusive Profit Test* (Autumn 1979) by Lee D. Parker.

Forthcoming Conferences

The next Conference of the *Association of University Teachers of Accounting* will be held at the University of Dundee on April 6–9, 1981. Professor J. R. Grinyer, Department of Accountancy, University of Dundee, Dundee, Tayside will be pleased to receive offers of papers. Price reductions may be available on British Rail.

The next Conference of the *European Accounting Association* will be held at the Instituto de Estudios Superiores de la Empresa (IESE), Barcelona on April 13–15, 1981.

Mr. E. R. Kermode, 35 The Deans, Portishead, Bristol BS20 8BG would like to obtain a copy of *Accounting and Business Research* No. 26 (Spring 1977) either for cash or in exchange for a copy of No. 33 (Winter 1978).

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Capital Maintenance Concepts, Gains from Borrowing and the Measurement of Income[1]

J. J. Forker

Introduction

The debate on how to account for income given the existence of changing price levels is by now both international and well developed. At the present time it is possible to detect, particularly in the UK [1], a hardening of outlook in favour of one particular approach. This is based on the method of measuring income first proposed by Godley and Cripps [GC] [2]. The UK accounting profession has adopted a variant of the GC approach and this has been incorporated in the most recent professional recommendations on inflation accounting, set out initially in the Hyde Guidelines [3], and currently in SSAP 16 [4]. The main concern of the post-Sandilands [5] debate on inflation accounting in the UK, has been to devise a method of calculating income which includes some measure of the gain made by equity shareholders when the firm borrows money. This concern to measure equity well-being would seem to dictate an equity based capital maintenance concept. However, the GC approach has been to adopt a partial entity maintenance concept which allows a gain from borrowing to be recognised as income by including, as an addition to the partial maintenance of physical capital, the maintenance of gearing. The GC approach thus appears as a curious hybrid of the classical entity and equity motives for measuring income. Only part of entity capital appears in the maintenance concept, and the maintenance of financial structure is added in order to allow gains to equity from borrowing to be recognised.

The focus of this paper will be directed toward the maintenance concept which underlies the GC approach to income measurement, and the aim will be to demonstrate that this concept, while allowing gains from borrowing to be recognised, is inferior in a number of respects to an alternative approach suggested by Edwards and Bell [EB] [6]. This alternative adopts the equity orientated capital maintenance concept which has traditionally been used in measuring corporate income, i.e., the maintenance of equity's opening capital, and is amended to allow gains from borrowing and losses from lending to be recognised, while at the same time dealing in a satisfactory manner with the problem of accounting for both general and specific price changes [7].

Decisions about capital maintenance concepts provide the logical starting point in any exercise determining business income, in that from different maintenance concepts *ceteris paribus* different measures of income will result, and consequently any meaningful interpretation of income requires knowledge of the benchmark used to determine that income figure. The recent character of the debate on price level accounting in the UK indicates a regrettable tendency to focus on adjustments to be made in the income statement to arrive at price level adjusted income, without any attempt to consider the implications which such adjustments have for the maintenance concept applied. If this paper contains any lessons for those suggesting alternative methods of measuring income it would be that where income is determined by reference to the maintenance of some form of capital, as in the business context it invariably is, then as a starting point the related maintenance concept implied should be identified. Only then can the characteristics of the income measure proposed be fully appreciated in the light of the benchmark adopted, as to suitability for the purpose for which income is being measured. Arguably, the most legitimate and operationally the most important criterion for appraising alternative measures of income is how well they perform the task of assessing managerial perform-

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[1] I am indebted to my colleagues Don Egginton and Geoff Whittington, and to Martin Gibbs of Messrs. Phillips and Drew, for their generosity in commenting on and criticising successive drafts of this paper. Because of their assistance the quality of the arguments presented has been much improved. For the shortcomings which remain, I alone am responsible.

Table 1	*Maintenance Concept*
(1) Edwards and Bell	Maintain the purchasing power of equity's opening capital.
(2) Godley and Cripps	Maintain equity's share of fixed assets and stock, *and* initial gearing.
(3) Imperial Chemical Industries [10]	Maintain equity's share of fixed assets, stock and monetary working capital, *and* initial gearing.
(4) Hyde	Maintain equity's share of fixed assets and stock, *and* average gearing.
(5) SSAP 16	Maintain equity's share of fixed assets, stock and monetary working capital, *and* average gearing.

ance, and possibly of providing useful information for the valuation of equity securities. As a postscript to this paper, a section is provided which considers from these viewpoints the merits of the measurement concept advocated.

Before proceeding, it is perhaps worth making clear that the focus of this paper is solely on income determination, and nothing included ought to be taken as having any direct implication for that other thorny and related problem—the distributability of income. Also, specifying at this stage the interpretation placed in this paper on two technical terms used in discussions of income theory, may help to avoid misunderstanding. Firstly, the capital maintenance concept. This is viewed merely as a neutral benchmark to be used in determining the surplus which accrues to shareholders as income, and implies nothing which ought to be interpreted as suggesting normative behaviour for the management of the enterprise [8]. Secondly, income may or may not be calculated in real terms. Real terms accounting involves valuing assets and liabilities in accordance with the principles of current cost accounting (CCA) while the maintenance concept is valued in current purchasing power (CPP) terms [9]. As a result, income of shareholders is reported excluding the fictitious element which arises where the general level of prices has risen and the purchasing power of shareholders' money has fallen. This notion of real terms is analogous to the widely held view that only real capital gains should be taxed, i.e., the taxable gain is not the nominal difference between buying and selling price, but that difference less the component attributable to the increase in the level of prices between the two dates. This view of real terms is not, however, generally adopted in accounting for income under changing price levels, although advocates of pure CPP accounting and pure CCA accounting (GC fall into the latter group) would perhaps view their favoured methods as being in real terms. As neither accounts for CCA and then separates out the fictitious element of gains arising due to the fall in the general purchasing power of money, they do not report income in real terms according to the above definition.

Alternative maintenance concepts

To set the scene, Table 1 describes the maintenance concepts of the two principal alternatives which are to be compared in this paper. These are the approaches of EB and GC. Alternatives (3) to (5) are provided to complete the picture; these are the variants of the GC method which have been advocated to date.

The framing of the GC type maintenance concepts to cover the maintenance of equity financed assets, plus the maintenance of gearing, allows gains from borrowing to be recognised by applying the gearing proportion to the inflationary increase in the value of the firm's operating base, as defined by the maintenance concept. For (2) and (3), all asset holding gains will be included while for (4) and (5) only realised holding gains are available, following the accounting convention of prudence or conservatism [11]. In adopting GC or its variants, decisions which are essentially arbitrary must be taken regarding the point in time at which the gearing proportion has to be measured, and on the definitions to be applied to 'gearing' and 'monetary working capital'. If the company happens to be a net lender rather than a borrower, it is not clear how this circumstance should be dealt with. GC themselves did not consider this possibility. If equity financed assets are to be maintained, then consistency would require an additional charge to be made against income to allow for the maintenance of the net lending financed by equity. This is what Hyde recommended. However, the guidance notes to ED24 [12] specifically rule out this treatment where net lending exists, on the grounds that 'no adjustment is needed as the excess is not part of the net operating assets'. While this may be so, it still remains the case that equity is financing such net lending; and if borrowing is considered to give rise to gains to equity shareholders, logic would seen to dictate that lending correspondingly gives rise to losses. Not to follow the Hyde treatment would appear to introduce asymmetry between the treatment of gains from borrowing, compared with losses from lending, as far as the measurement of shareholders' income is concerned. Viewed in the context of the attempt to account satisfactorily for gains and losses to equity, from borrowing and lending, this asymmetry seems a serious shortcoming.

The principal characteristics of the EB approach are that the gains from borrowing, and losses from lending, are measured with reference to the combination of amounts borrowed and lent together with the movement in a general price index over the period concerned. This measure reflects the gain in purchasing power achieved for equity shareholders (from borrowing) and mirrors the loss suffered by lenders. The figure reported as income excludes the fictional element of asset holding gains attributable to increases in the general level of prices and thus the income figure indicates how much better off the equity shareholders have become, in real terms, as a result of management's actions.

The aim of the remainder of this paper is to demonstrate the superiority of the EB real terms method of determining income against those alternatives which incorporate some element of proportionality into the capital maintenance concept, primarily the approach adopted by GC. In what follows only the GC maintenance concept will be referred to. As the variants included in Table 1 do not differ in principle from the parent concept, i.e., they are all partial physical capital maintenance concepts, then, should the arguments presented be successful, and EB be shown to be superior to GC, then the variants will also be vanquished.

The advantages claimed for the EB real terms method of determining income are:

(i) it allows determination of income in real terms. This is not technically possible where any part of physical capital is to be maintained, as under GC;

(ii) because of the flexibility of the method adopted for calculating gains from borrowing, representative and comparable results are obtained irrespective of the levels of borrowing at any particular point in time, or whether the firm is a net borrower or net lender. Because of the need to compute gearing at a point in time, or as an average, under GC, this could in practice give rise to results which do not allow fair comparisons across companies;

(iii) a separation of the gains to equity from company borrowing and company investing is achieved. This reflects the fact that borrowers gain and lenders lose, to some extent, in terms of purchasing power, should prices in general rise, and this transfer takes place irrespective of the investment decisions of the management. GC does not recognise such a separation;

(iv) the maintenance concept adopted by EB is similar to that which has traditionally underpinned corporate income measurement. This latter characteristic is likely to contribute to a higher degree of comprehension among preparers and users of accounts than will the unusually contrived GC concept. It will be further demonstrated that accounting for EB real terms income requires no more difficult adjustments than those which underlie the present recommendations of the UK accounting profession.

A final section is devoted to a critique of some points made by Kennedy [13] in his defence of the GC approach.

EB and GC compared

It is not difficult to demonstrate that GC income cannot be expressed in real terms according to the above definition despite the authors' attempt to achieve this [14]. Ability to account in real terms is determined by the choice of maintenance concept adopted. Consider the following three variables which have to be decided upon before income can be determined:

(1) Capital maintenance concept.
(2) The basis for valuing assets and liabilities.
(3) The base date of prices to be applied to the maintenance concept chosen.

Regarding (1), maintenance concepts (a) and (c) below reflect the classical entity, equity extremes. Concept (b) is that introduced by GC.

Maintenance Concepts

(a) Physical Capital = Maintain physical capital.

(b) Partial Physical Capital = Maintain gearing and equity's share of physical capital.

(c) Equity's Opening Capital = Maintain the value of equity's opening capital.

Choice of maintenance concept (a) or (b) implies that, for variable (2) above, assets and liabilities should be valued according to the principles of CCA, because physical capital maintenance constitutes part or all of the benchmark. Given current asset prices for (2) and either (a) or (b) for (1), the prices to be applied to the maintenance concept under (3) are current asset prices, i.e., CCA, as the value placed on the benchmark must reflect closing asset prices if physical capital or any part of it is to be 'maintained'. It is therefore *not* possible, given choice of (a) or (b), meaningfully to introduce CPP for variable (3) and thus account in real terms. Alternatively, if maintenance concept (c) is chosen then income *can* be accounted for in real terms. CCA may be adopted for (2), and for (3) the opening equity interest in the enterprise will be expressed in CPP terms. Thus real terms accounting is possible *only* if maintenance concept (c) is chosen, i.e., the EB approach. Real terms for (a) or (b) is not possible.

The following examples are designed to illustrate the advantages cited for the EB real terms method of measuring income over the results provided by GC. Two possible situations are presented which reflect essentially the same set of economic circumstances. For the most part the first situation, where a position of net borrowing exists, will serve to illustrate the contrasting features of GC and EB. The second case is essentially the same as the first, except that at the beginning of the accounting period a position of negative gearing exists. This contrast is employed to illustrate how unrepresentative results can arise under GC for essentially similar companies. An Appendix is provided containing a numerical example based on the following cases, which, for purposes of generality, are expressed algebraically.

A company is set up financed by equity capital plus an interest free, non-index linked, loan. These funds are used to purchase an asset whose services will be retailed over a number of accounting periods in equal quantities. One sale is made in the first period at equivalent current cost consumed, thus current operating income is zero.

Prices are assumed stable in the first period, and the sale revenue is assumed to be greater than the loan outstanding. The difference between the two situations is that for case I, by the end of the first accounting period, the asset services sold are replaced immediately out of the proceeds of the sale, while for case II at the end of that accounting period the sale made on credit stands as a debtor in the first period closing balance sheet. Thus, for case I, net borrowing exists and for case II net lending exists. In the second period nothing happens except that for case II, at the beginning of the period, the debtor pays up and the proceeds are used to replace the asset services previously sold. By the end of the year the specific price of the asset rises by p and the general level of consumer prices has risen by i.

Let

i = rate of change of retail prices (general) over the second year.
p = rate of change of asset prices over the second year $[p > i]$
D = value of debt
E_1, E_2 = value of equity at t_1 and t_2; where t_1 and t_2 represent end of first and second periods
N = value of non-monetary asset
L = number of periods for which the asset will provide services
V_1, V_2 = value of total assets at t_1 and t_2
M = value of monetary asset $[M > D]$

Case I

Consider first, case I. The opening and closing balance sheets for the second period are as follows:

Opening		*Closing*	
E_1	N	E_2	$N(1+p)$
D		D	
V_1	V_1	V_2	V_2

The difference between GC and EB relates to the maintenance concepts and hence the income figures reported. Thus, to identify differences, the closing equity figure E_2 must be abstracted.

For GC, the equity share of assets and gearing are 'maintained'.

Thus,

$$E_{2_{GC}} = [E_1(1+p)] + Dp \qquad (1)$$

where $E_1(1+p)$ is the maintained component of capital (in what follows the benchmark will be enclosed in square brackets) and Dp is income, in this case the gain from borrowing, i.e., from $D/V_1 . V_1 p = Dp$. First consider the nature of this gain from borrowing. It arises because of the addition of the maintenance of opening gearing incorporated in the maintenance concept applied. The GC approach views the gains from borrowing as identified with the fate of the asset values of the business. That this is illogical may be inferred by considering, in general, the nature of gains from borrowing. If lenders are to be compensated for changes in the level of prices, this compensation takes the form of an addition to the nominal rate of interest equal to the rate of change in prices. In practice, the rate of change of prices relates to movements in a general price index—the RPI is such an index in the UK. Thus real interest rates are nominal rates adjusted for the rate of change in retail prices. Failure of nominal rates and hence the cost of debt servicing to keep pace with rises in the level of prices brings about a fall in the present value of non-index linked debt outstanding, equal to Di. This amount reflects the shareholders' gain, mirrors the loss suffered by lenders, and occurs irrespective of the changes in value of assets owned due to price level fluctuations.

Another deficiency of the GC method arises from any attempt (such an 'improvement' was suggested by GC) to report income in real terms according to the definition laid down earlier. Recall that real terms income can only be measured if the capital to be maintained can be updated by CPP from its opening level. This is not possible if complete or partial physical capital maintenance is adopted (GC follows the latter if net borrowing arises; the former if net lending exists). It is easy to show that 'real' terms (RT in the identities below) GC is identical, in terms of capital maintained and income determined, to money terms GC:

$$\begin{aligned} RT\ E_{2_{GC}} &= E_{2_{GC}} \\ &= [E_1(1 + i) + E_1(p - i)] \quad (2) \\ &\quad + Di + D(p - i) \end{aligned}$$

where $E_1(1 + i) + E_1(p - i) = E_1(1 + p)$, from (1), and $Di + D(p - i)$ equals the income Dp from (1). The results are identical and the dichotomy between real and non-real GC income is false [15].

To be fair, in the 1st October 1975 *Times* article, GC, while recognising that their real terms income will equal their money income figure, proceed, in the real terms version, to segment the gains reported so as to provide the separation indicated in (2), Di as monetary gain being separately identified from $D(p - i)$. However, the point made above still stands. As the maintenance concept relates to the partial maintenance of physical capital then real terms accounting based on CPP adjustment of opening equity interest is not possible, and an 'above the line' segmentation of gains, whilst of interest, does not change the income figure and thus real terms income reporting is not accomplished.

Contrast these features with those of EB real terms:

$$RT\ E_{2_{EB}} = [E_1(1 + i)] + Di + N(p - i) \quad (3)$$

Income, $Di + N(p - i)$, is reported following the separation argued for earlier. Di, the gain from borrowing, is reported reflecting the loss incurred by lenders in real terms, and is thus reported as the corresponding addition to the income of the shareholders. The gain from investment, $N(p - i)$, is reported excluding any fictional element arising because of the increase in the general level of prices.

While the above example is constructed on the twin assumptions of the existence of inflation and real holding gains, i.e., $p > i > 0$, the points made concerning the relative characteristics of GC and EB regarding accounting in real terms, and the separation of different types of gain, apply for all possible combinations of price change. Table 2 below lists the full set of possible combinations, together with the associated GC and EB RT income figures.

The final case, where no real holding gain or loss arises, is of some interest as it is the only circumstance where GC income equals EB RT income, i.e. for case (5), EB RT holding gains equal zero and Di equals Dp. The reason for the same figures being reported as income is, however, different. GC income is the same as in every other possible case and relates only to the movement of the asset's special price index. EB, as always, reports the separate gains from borrowing and investing, the latter here being zero, and Di is the gain from borrowing and so, in this case, equals income.

The final step in this section involves utilisation of the contrast between case I and case II. The purpose of this contrast is to highlight another feature of the GC method, which arises from the need to decide at a point in time on the respective levels of borrowing and lending of the firm, in order to determine the gearing proportion or alternatively the net lending which exists. If the latter arises, and the Hyde solution is followed,

Table 2

	GC	EB RT
[1] $p > i > 0$	$Di + D(p - i) = +Dp$	$+Di + N(p - i)$
[2] $p < i > 0$	$+Dp$	$+Di\,(+)\,N(p - i)$
[3] $i < p < 0$	$-Dp$	$-Di\,(+)\,N(p - i)$
[4] $p < i < 0$	$-Dp$	$-Di + N(p - i)$
[5] $p = i \neq 0$	$\lvert Dp \rvert$	$\lvert Di \rvert$

which consistency would seem to require (see ref. [12]), then misleading and incomparable results may be reported across companies. In the present example, for two firms with essentially the same circumstances, different income figures are reported. Recall that case II differs from case I in that the opening balance sheet for the second year gives rise to a position of net lending, i.e., $D < M$. As a result no gearing gain can arise as equity effectively finances net assets, and the capital maintenance concept switches to that of maintaining all assets, physical as well as net monetary assets.

The opening and closing balance sheets will be as follows:

Opening		Closing	
E_1	$N\dfrac{L-1}{L}$	E_2	$N(1 + p)$
D	M	D	
V_1	V_1	V_2	V_2

Proceeding as before, the E_2 abstract is:

$$E_{2_{GC}} = [E_1(1 + p) + Dp + (M - D)p] - (M - D)p \quad (4)$$

The holding gain on the asset (given conversion of the debtor into asset services at the start of the period) will be Np, as before. For case II, no part of this gain is credited to income. As the maintenance concept now covers net assets in full, a double addition is made to the capital to be maintained. Np is added in the form of Ep plus Dp, while for net monetary assets, a charge is made in the income statement of $(M - D)p$, and the corresponding credit appears as the final component of the sum maintained in (4) above. Income is $-(M - D)p$ as compared to Dp for case I. The gain from borrowing does not appear as part of income, although it exists, as the loan of D is outstanding throughout the second year. In general, whenever full net assets are to be maintained, gains from borrowing will not appear as *income*.

Applying the EB real terms concept to case II gives the identical result as in case I:

$$RT\ E_{2_{EB}} = [E_1(1 + i)] + Di + N(p - i) \quad (5)$$

which is the same as equation (3). Thus, equivalent situations are accounted for similarly.

These advantageous features are obtained using the traditional maintenance concept (based on current prices) and avoid any problems which may arise under GC of deciding on the exact definition of debt which is to be used for the gearing ratio.

Given the important consideration of simplicity of implementation if any method of income measurement is to achieve operational status, it is worth while, from this point of view, to compare the EB approach with that of Hyde. The calculations to arrive at current operating income will be the same, Di and $N_1(p - i)$ being as easy to calculate as Dp, the only additional feature being the change in the general price index, i. Thus it would seem that on grounds of simplicity of implementation, EB is in no way inferior to Hyde or GC, and because of its adherence to the traditional maintenance concept may be a good deal more comprehensible.

Comment on Kennedy

As a postscript to the analysis of the relative merits of the GC and EB methods of determining income it is interesting to consider some of the arguments and suggestions made by Kennedy in his advocacy of a variant of the GC approach. He first criticises the Hyde approach because it fails to include a balance sheet linked to the supplementary Profit and Loss Account recommended. It is, however, worthy of note that Kennedy himself in putting forward his preferred variant of GC fails to follow his own advice and omits to provide a Balance Sheet. Had he attempted to do so then perhaps he would have been obliged to deal with the contradictions inherent in the nature of his proposal. He argues that, depending on the purpose for which income is measured, different measures of income will be appropriate. This is no doubt correct. Kennedy then proceeds to suggest a Profit and Loss Account in which a number of income, profit and gains concepts are presented—five in all. This may be a desirable exercise but it leaves the reader wondering how the alternative maintenance concepts and income measures are to be incorporated in the Balance Sheet.

A second feature of his proposals which merits attention is the addition of ungeared holding gains [$E_1 p$ in the model of this paper to GC income of Dp]. This allows a figure to be shown for what Kennedy describes as 'Total proprietary gains' [$Dp + E_1 p$]. He then converts this figure to 'Inflation corrected proprietary gains' by subtracting the 'Inflationary element of *all* holding gains'. This reduction amounts to $V_1 i$ and in taking away this figure Kennedy commits an error of double counting. Recall from the earlier comparison of GC income, in equations (2) and (3), that the geared holding gain Dp is the same under both alternatives, i.e., $Dp = Di + (D/V_1).V_1(p - i)$. Thus that part of 'Total proprietary gains' representing geared holding gains, Dp, is already in real terms and the inflation adjustment should relate only to $E_1 p$. Therefore only $E_1 i$ should be added back, not $(D + E_1)i$.

The third feature of Kennedy's paper deserving of attention here is his argument against the conservatism of the Hyde measure of income. For reasons based on supposed stock market reaction to the size of profits reported by the corporate sector, Kennedy argues that the health of the economy will be improved by reflecting larger rather than smaller profits for the corporate sector in general. This argument leads him to rank as more favourable the method of determining income which gives rise to the larger income numbers. If we accept for the moment the basis of Kennedy's argument, then it is clear that on these grounds the EB real terms approach may yet again be superior to the GC alternatives. Setting aside any consideration relating to prudence, and where $\rho > i$, the gains credited for financing and investment decisions will be as follows:

GC	EB
Dp OR $Di + D(p - i)$	Di plus $N(p - i)$ OR $E_1(p - i) + D(p - i)$

For this case the EB method gives rise to an additional credit to income of $E_1(p - i)$. This follows from the difference in the maintenance concepts. EB requires a 'top-up' of only $E_1 i$ whereas GC requires $E_1 p$.

EB, RT income and its use as a performance evaluator and in share valuation models [16]

Ex post income measurement performs an important role in allowing an evaluation to be made of management's performance on behalf of shareholders. In what follows, as has held throughout this paper, the question of the type of current values which are to be applied to assets and liabilities has been left to one side. It is assumed that some satisfactory solution to the problem has been achieved. Consider the following points:

(1) Income is the excess, if a profit exists, which arises over the benchmark set by the maintenance concept.

(2) Management's performance is measured with a view to establishing the effect of that performance on shareholders' well-being.

(3) In order to obtain a size normalised indicator of managerial performance, an accounting based rate of return ratio, of profit earned to capital stock employed, is widely relied upon. Using EB RT data this would be EB RT Income/$E(1 + i)$.

It seems reasonable, from (1) and (2), that the benchmark should be set up in terms which relates to shareholder purchasing power, i.e., opening value of equity interest expressed in terms of current purchasing power, which is the EB RT benchmark. Further, in order to achieve consistency, the numerator ought to be measured in the same dimension as the denominator. This is achieved if EB RT income is used. Thus an accounting rate of return, measured as indicated, fulfils the twin conditions of relevance (both numerator and denominator are measured in terms which take account of any change in the purchasing power of money to shareholders) and of consistency (the numerator and denominator are measured in £s of the same purchasing power).

Share Valuation Models

The second area where it appears to be desirable that variables should reflect shareholders' purchasing power relates to models for share evaluation. As a basis for illustration one of the best known models will be considered. This is the model known as the Gordon Growth Model [17], in its perpetuity form. The model describes the current price of a share P to be a function of the present dividend per share, the retention ratio, the cost of equity capital and the rate at which dividends are expected to grow. The last three variables are assumed constant into perpepuity.

P = current price per share
$1 - b$ = payout ratio
E = current earnings per share
i = the equity cost of capital
g = growth rate of dividends

$$\text{Then } P = \frac{E(1 - b)}{i - g}$$

From this can be derived one of the main variables apparently used by the stock market in appraising share values. This is the price earnings ratio: $P/E = 1 - b/i - g$. The consistency condition mentioned above, that in any ratio the numerator ought to be measured on the same basis as the denominator, would therefore suggest that an earnings figure measured with reference to a CPP benchmark would be appropriate. Using EB RT earnings allows this condition to be fulfilled.

Conclusion

One of the main features of the inflation accounting debate in the UK since the publication of the Sandilands Report has been the concern that, in some form or other, the gain or loss a company makes from borrowing or lending in a climate of inflation should be included in the income reported as attributable to the equity shareholders of the company. At the present time, the preferred solution appears to be that which stems from the proposals of Godley and Cripps and which are reflected in the Hyde Guidelines and SSAP 16. The central feature of this approach has been to amend the traditional capital maintenance concept applied so that gains from borrowing are calculated with direct reference to the movement of the prices of assets owned by the company. The premise of this paper has been to adopt the equity rather than the entity view of measuring income, and thus to argue that an alternative maintenance concept, suggested by Edwards and Bell, is superior in a number of respects to Godley and Cripps type solutions. In addition to possessing the desirable features of allowing income to be reported in real terms, which is shown not to be possible where maintenance of physical capital or any part of it is used as the benchmark, gains from borrowing and losses from lending are reported so as to reflect the actual transmission of benefits from lenders to borrowers given inflation, and further, any real holding gains arising from the separate decision relating to investment are reported separately. The EB approach also allows greater flexibility in the treatment of gains from borrowing and losses from lending so as to provide income measures which allow fair comparisons to be made across companies. This may not result from the application of the GC type alternatives.

References

[1] It is not only in the United Kingdom that the form of the capital maintenance concept, to be criticised in this paper, has been favoured. Official support for concepts based on the partial maintenance of physical capital, i.e. equity's share, has been forthcoming in West Germany: see A. G. Coenenberg and K. Macharzina, "Accounting for Price Changes: An Analysis of Current Developments in Germany', *Journal of Business Finance and Accounting*, Spring 1976, and also in New Zealand: see *Report of the Committee of Inquiry into Inflation Accounting* (The Richardson Report), Government Printer, 1976.

[2] *The Times*, 1st October 1975. 'Profits, stock appreciation and the Sandilands Report' by Wynne Godley and Francis Cripps. The basic approach was earlier developed in a discussion paper written by Godley together with Adrian Wood in Autumn 1974 entitled 'Stock Appreciation and the Crisis of British Industry' and was published in *Economic Policy Review*, 1975.

[3] 'Inflation Accounting—an interim recommendation by the Accounting Standards Committee', 4th November 1977.

[4] 'Current Cost Accounting', Accounting Standards Committee, March 1980.

[5] *Report of the Inflation Committee*, HMSO, Cmnd. 6255, 1975.

[6] Edwards, E. O. and Bell, P. W., *The Theory and Measurement of Business Income*, University of California, 1961, chapter 8.

[7] It should be stressed that it is the real terms maintenance concept advocated by EB which is being championed. This is maintenance of the opening value of the equity shareholders' interest in CPP terms. The separate and important issue of the valuation base to apply to the assets and liabilities of the company is not considered in this paper, apart from as indicated in section 3, that some form of current valuation base be applied. In particular, for the purpose of income determination an eclectic valuation base such as Deprival Value might be more appropriate than the EB favoured replacement cost of embodied inputs approach, *op. cit.*, p. 186, footnote 18.

[8] Choice of maintenance concepts may however be dictated by the preferences of managers and/or owners. D. A. Egginton, in 'Distributable Profit and the Pursuit of Prudence', *Accounting and Business Research*, forthcoming, suggests the likelihood of a relationship between these preferences, the choice of maintenance concept, and behaviour with respect to actual maintenance decisions.

[9] This follows the Edwards and Bell version of real terms set out in chapter 8, *op. cit.*, pp. 233–269.

[10] This is the method adopted by ICI in preparing their own current cost accounts, and which has attracted widespread support.

[11] The EB approach can easily accommodate the adoption of the prudence convention, but this distinction is not viewed as a central issue in the present paper.

[12] *Guidance Notes on ED24: Current Cost Accounting*, paragraph 90(a), page 27.

[13] Kennedy, C., 'Inflation Accounting: Retrospect and Prospect', *Economic Policy Review*, 1978, pp. 58–64.

[14] In Table 2 of *The Times* article on 1st October 1975, Godley and Cripps endeavoured to report income in real terms by taking account of changes in the Retail Price Index; this however did not change the income figure reported, only the description of the gains arising.

[15] The desire of the UK Accounting Standards Committee to keep Hyde and SSAP 16 free of CPP is thus seen to be well founded, as is the resistance of entity income theorists, e.g. Gynther, to the introduction of CPP adjustments in income statements. See R. S. Gynther, 'Why Use General Purchasing Power?', *Accounting and Business Research*, Spring 1974.

[16] The points made below can be considered together with the other arguments presented by Edwards and Bell, *op. cit.*, pp. 264–269 on 'the usefulness of real data'.

[17] Gordon, M. J., *The Investment, Financing and Valuation of the Corporation*, Irwin, 1964.

Appendix

The purpose of this Appendix is to provide a numerical example which mirrors the algebraic presentation of the two cases set out in the paper, together with the associated contrasted income measures. Assume the following values attach to the variables incorporated in the examples:

Let

i = rate of change of retail prices (general) over the year = 0.1

p = rate of change of asset prices over the year = 0.3

D = value of debt = 8

E_1, E_2 = value of equity at t_1 and t_2; where t_1 and t_2 represent end of first and second periods = 92, 122

N = value of non-monetary asset = 100

L = number of periods for which the asset will provide services = 10

V_1, V_2 = value of total assets at t_1 and t_2 = 100, 130

M = value of monetary asset = 10

The opening and closing balance sheets for the first case will be:

	Opening	*Closing*		*Opening*	*Closing*
Equity	92	122	Asset—Non-monetary	100	130
Debt	8	8			
	100	130		100	130

Thus,

$$E_2\ \mathrm{GC} = [92 + 27.6] + 2.4 = 122. \quad (1)$$

The benchmark is set equal to equity's share of physical assets, and a top-up of (92 × 0.3) is made. The other component of the benchmark, maintenance of initial gearing, allows a gain from borrowing to be recognised (8 × 0.3) and this is credited, as income, in the profit and loss account:

$$RT\ E_{2_{GC}} = [92 + 9.2 + 18.4] + 0.8 + 1.6 \quad (2)$$

Here the sum maintained, and the amount reported as income, are identical to (1), which is not surprising as the maintenance concept applied remains unchanged. A segmentation of income is however provided where a gain from net liabilities is calculated with reference to the movement of the general price index (8 × 0.1), together with a real holding gain on assets, 8 × (0.3 − 0.1). The maintenance top-up amounts to 27.6, the sum required if equity's share of physical assets is to be maintained:

$$RT\ E_{2_{EB}} = [92 + 9.2] + 0.8 + 20 = 122 \quad (3)$$

For EB, the benchmark is the sum required to maintain, in current purchasing power, the opening interest of the equity shareholders, thus 92 × 0.1 is added to the opening equity stake. Income comprises the gain from borrowing (8 × 0.1) and the real holding gain on assets of (100 × 0.3 − 0.1).

The opening and closing balance sheets for case II will be:

	Opening	*Closing*		*Opening*	*Closing*
Equity	92	122	Asset—Non-monetary	90	130
Debt	8	8	—Monetary	10	
	100	130		100	130

Then

$$E_{2_{GC}} = [92 + 27.6 + 2.4 + 0.6] - 0.6 = 122 \quad (4)$$

Adopting the Hyde adjustment when an excess of monetary assets exists, no gain from borrowing is recognised but a charge is made to the Profit and Loss Account to allow 'maintenance' of the net lending undertaken by the company. Thus (2 × 0.3) is charged and the corresponding credit becomes part of the maintenance top-up. When a surplus of net monetary assets arises, the maintenance concept changes to maintenance of physical plus working capital and *accordingly* no recognition of a gain from borrowing takes place. The maintenance concept requires both equity's and debt's share of assets to be maintained, hence 27.6 (92 × 0.3) and 2.4 (8 × 0.3) are included together with the (2 × 0.3) referred to above:

$$E_{2_{EB}} = [92 + 9.2] + 0.8 + 20 = 122 \qquad (5)$$

As in equation (2) income is 20.8 and capital maintained equals 101.2. The two cases which are essentially identical are accounted for in a consistent manner.

Updating Note

The example for Case II, in treating the debtor balance as negative borrowing, blurs a distinction between monetary assets held, as a result of trade and others, which has been made clearer, since the writing of this paper, by the publication of SSAP16. However, the example does illustrate an undesirable potential for misrepresentation and misleading comparisons inherent in the GC type approach due to what will in many instances be arbitrary divisions of balances to fit definitions applied in the determination of income figures. Paragraph 22 of SSAP16 acknowledges as unresolved the accounting problem which arises for the gearing ratio based approach, where companies held monetary assets in excess of borrowings.

Maintenance of Capital Intact: An Unnecessary Abstraction?

John R. Grinyer and Iain W. Symon[1]

Introduction

Theoreticians and practitioners, alike, speak and write as if maintenance of capital intact (hereafter frequently called 'the concept') was the only sound basis on which to build a satisfactory theory of income measurement. An illustration of this in the UK is the Sandilands Report (Cmnd 6225), which bases its system of Current Cost Accounting squarely on the maintenance of welloffness, i.e., of capital in a Hicksian sense [1]. Despite the apparent dominance of the concept, we see little support for it as a basis for practical measurement in the literature of economics. As accountants are concerned with modelling the real world, it is conceivable that they have adopted the concept in recent years because of their perceptions of the constraints imposed upon businesses by the people (or firms) who are directly involved with them. We consider this possibility and cannot identify any logical reasons why such constraints should be imposed in the *long term* interests of the participants in business. Maintenance of capital intact does not reflect any real world constraint which we can identify and we therefore argue that it is an abstraction. We discuss whether maintenance of capital is a useful, perhaps even a necessary, abstraction. After considering the availability of alternative theories, we conclude that the case for the concept is far weaker than usually seems to be supposed. We question the relevance of the concept as the basis for practical reporting and propose to write future papers, exploring the issue further by means of comparative studies of alternative theoretical bases.

This paper will proceed as follows:

Part 1 sets out the assumptions and definitions used in the subsequent analysis.

Part 2 reviews some of the literature to identify the sort of opinions held by economists and accountants concerning the importance of the concept. It cannot provide a comprehensive coverage, because of limitations of space, so the exclusion of eminent contributors to past discussion is neither a slight on them nor an indication that we are, necessarily, unaware of their works.

Part 3 considers whether the concept is likely to be a model of practical constraints rather than an abstraction. It suggests that the concept is an abstraction.

Part 4 attempts to identify whether the maintenance of capital concept is a useful abstraction. The discussion deals with interpretation and measurement, and argues that, although the concept is meaningful, the surplus after maintaining capital cannot usually be measured in practice.

Part 5 discusses whether the concept should be used as the basis for practical measurement, despite the fact that, in our judgement, it is impossible to implement it adequately. The analysis indicates that there are grounds for questioning the adoption of the 'maintenance of capital intact' approach as the basic theory of accounting. It is suggested that 'matching' provides an alternative theoretical basis and that cash flow accounting may provide another.

Part 6 concludes the discussion and indicates the further work to be pursued in the research project of which this paper is part.

Part 1

Assumptions and definitions

This paper considers only publicly quoted companies. Much of the discussion can also be applied to other firms, but their exclusion enables the paper to proceed without the many deviations which would be necessary to consider their special features.

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[1] The authors wish to thank Professor G. Whittington, and those attending the Accounting Research Workshop at Glasgow on 6 December 1978, for useful comments.

We assume that the purpose of Income Statements is to provide information concerning the wealth which has been generated by the operations of the firm, and that such information is to be provided to shareholders and other investors, to creditors and to employees. The FASB statement *Tentative Conclusions on Objectives of Financial Statements* [2] states:

> Financial statements of a business enterprise should provide information about the economic resources of an enterprise, which are sources of prospective cash inflows to the enterprise; its obligations to transfer economic resources to others, which are causes of prospective cash outflows from the enterprise; and its earnings, which are the financial results of its operations and other events and conditions that affect the enterprise. Since that information is useful to investors and creditors in assessing an enterprise's ability to pay cash dividends and interest and to settle obligations when they mature, it should be the focus of financial accounting and financial statements.

We accept the FASB statement and assume that the information will also be useful to employees, and their representatives, for the assessment of the firm's prospects and its potential for payment of wages. Although we agree that statements of resources and obligations provide important information concerning the firm, this paper is focussed exclusively on the definition and measurement of 'earnings'. Chapter 5 of the FASB Discussion Memorandum *Conceptual Framework*... [3] amply illustrates the varied definitions of that term. A general definition which might encompass all others is: 'Earnings, or net profit, is a measurement of the increase in wealth derived from defined operations or activities'. To avoid confusion with existing terminology we will adapt a term introduced by Adam Smith [4] and call our earnings measurement 'net revenue', which we use to identify a measure indicating the wealth generated by a firm (in our case a public company) as opposed to a measure of the income of individuals.

The 'maintenance of capital intact' concept seems to mean different things to different people. We are not using the name to imply legal concepts or legal constraints, except to the extent that (in passing) we explore whether the law appears to impose effective constraints. Further, we are not using the term 'capital' in the sense in which it is used in Historic Cost Accounts where it indicates the aggregate of unexpired past outlays net of liabilities. In this paper the term indicates wealth at a point in time, which implies a valuation of a business at that time. (This thinking certainly underlies the Hicksian approach and appears to be implied by those current value proposals which require the recognition of unrealised holding gains.) There are alternative bases for determining 'net revenue' but under the maintenance of capital concept it must be the amount which could be distributed while retaining within the business the amount of the commencing wealth (after adjustments for inputs or withdrawals of wealth by the owners), i.e., it is N in (1) below.

$$N = W_1 - (W_0 + I_1 - D_1) \qquad (1)$$

where

N = 'net revenue'
W_1 = capital (wealth) at the end of the accounting period
W_0 = capital (wealth) at the commencement of the accounting period
I_1 = wealth introduced by the owners during the accounting period
D_1 = wealth withdrawn, or distributed to, the owners during the accounting period.

The 'concept' therefore requires the valuation of wealth at a point in time (to establish the amount to be maintained intact and the surplus generated) and indicates wealth generated *during* the period between the dates of valuation.

Part 2

The theory of capital maintenance

The principle of maintenance of capital as a medium for determining business income is identifiable comparatively early in economic literature. Thus E. S. Hendriksen [5] refers to Adam Smith's definition (in *The Wealth of Nations*, Vol. I, Book II, Chapter II), which was elaborated by J. R. Hicks [6]. The current doctrine is typified by T. A. Lee [7] as follows: 'The concept of capital maintenance is a vital part of income determination because of the need to incorporate in the income computation a measure of the change in capital during the relevant period'. Professor Lee is, in this case, following the normal accepted wisdom, and is thus in general agreement with such writers as R. R. Sterling [8]. There was, of course, a lively discussion on income measurement in the literature of economics, e.g., Fisher [9], Hayek, Pigou and Hicks [10]. It is, however, apparent that that discussion was largely directed at macro issues [11], and it is generally agreed that even if the concepts *could* be applied at that level, they would not be workable at the micro level, e.g., J. R. Hicks [12] states, as late as 1973:

> Only in the steady state can we unambiguously determine the size of profits. Out of the steady state the profit that is allocated to a particular period depends on expectations, such as are in practice expressed by conventions about depreciation; there is no such convention that is unambiguously right.

He had already suggested that the best valuation of enterprise capital is obtained from stock exchange share prices, not from aggregated balance sheets. There are, however, reasons against using this basis for measuring 'net revenue', as mentioned in Part 4 of this paper.

It appears that many economists think that any attempt made to measure the capital stock in the hands of a business enterprise is unlikely to succeed. In contrast, after a long and very painstaking discussion, R. R. Sterling [13], suggests that a Present Market method of valuation is a reasonable, if imperfect, compromise. He claims that this method meets the needs of information recipients better than other methods which he had examined (i.e., Irving Fisher's approach based on discounting, the traditional accounting model, and 'Boulding's Constant'—the use of a fixed ratio for conversion of assets to equivalents, because all other methods are essentially arbitrary). Professor Sterling does not appear to have exhausted the possibilities. Perhaps he has assumed, as on occasions most of us have, that 'the concept' (i.e., maintenance of capital intact) is essential to the financial reporting of business enterprises?

The current attitude of the accounting bodies seems to be in favour of concepts of capital maintenance as bases for the income measurement process. The fact that there is no clearcut way of measuring financial or physical capital of a business does not seem to deter them. For example, an FASB Discussion Memorandum [14] supports the concept and states that 'it is essential to the measurement of earnings in all circumstances'. However, the Memorandum identifies many disagreements between and within different schools of thought on how capital can be measured. A further example of current attitudes is found in a Phillips and Drew research paper, issued in June 1978, which implies that capital maintenance is the *only* acceptable underlying principle for income measurement:

> The weakness of the Hyde method is that it appears to have no theoretical justification in terms of a capital maintenance concept.

It appears, therefore, that although economists have been unable to agree on a general definition of 'income' or of its relationship to 'capital' (however the latter concept is defined), many practitioners and theoreticians in accountancy have based their argument concerning income measurement almost entirely on a concept of 'maintenance of capital intact'. Thus Staubus [15], although recognising that 'capital has many meanings', bases his analysis on the maintenance of capital concept. He states that all capital concepts 'relate to stocks of wealth (or interests in such stocks)'. A stock of wealth could be defined by reference to its monetary worth, its monetary worth adjusted to units of common value—i.e., to real terms as in current purchasing power accounting—or to units of physical goods. As all of these bases are currently practised or proposed, it seems appropriate to consider all of them as approaches to the establishment of capital. This paper is sufficiently general to encompass all of these concepts under the heading of 'capital', so that that term should be regarded as indicating any of the three approaches, if it is consistently applied.

It seems possible that the maintenance of capital concept models an identifiable business reality. If it does so adequately, there is no need for the support which is so often claimed from the economics literature, e.g., from Hicks. On the other hand, if the model does not reflect the real world, it requires a different rationale, which many economists believe to be missing. We therefore proceed to discuss whether or not 'the concept' does reflect real world requirements.

Part 3

A reflection of practical needs?

This part of the paper discusses whether or not maintenance of capital intact seems likely to reflect practical constraints imposed on the firm in the interests of groups involved with it. The position of each group is considered independently of the interests of others. Although there are obvious interactions between the groups we think that this procedure is the most straightforward and is adequate for our purposes.

The Corporate Report, issued by the ASSC in July 1975, identifies the people with a potential interest in a business as follows:

(a) the equity investor group
(b) the employee group
(c) the loan creditor group
(d) the analyst adviser group
(e) the business contact group
(f) the government
(g) the public.

This set can be divided into two sub-sets.

(i) Individuals, or entities, with direct interests in the firm, i.e., groups (a), (b), (c) and (e)
(ii) others, i.e., outsiders.

Obviously the factors which affect subset (ii) are complex and are difficult to model. Often the interests of people within the subset give rise to constraints imposed on firms by governments, e.g., anti-pollution measures. Such constraints, where applied, will be reflected in the firm's cost structure, and we consider that they need not be identified separately in the accounting model adopted for reporting. The possible constraints which might be imposed on businesses by 'outsiders' seem likely to be so varied and specific to individual firms that they are incapable of generalisation. (Taxation requirements represent artificial constraints which are best considered when we discuss alternative accounting models in a subsequent paper.) We believe that the accountant cannot model the interests of outsiders, so we are left only with subset (i) to consider in this paper, which proceeds by considering the constraints which each of the groups within that subset might wish to place on the firm.

We could separate the employees' group into the sub-groups of management and of other workers. Top managers represent an interesting and powerful group, because they are employees with the control of the business in their hands. Subject to any effective constraints imposed by the other interested groups, they can obtain finance and expand the resources held by the firm or disinvest and reduce the resources held by the firm, as they see fit. Given their freedom of action it seems reasonable to suggest that any constraints they might wish to impose on the firm have already been effective. The financial statements are therefore modelling the results of the business activity after managers' action in furtherance of their own interests. In these circumstances it is best not to require the accounting model to reflect managers' interests: rather the model should disclose the results of managers' actions so that the effectiveness of their stewardship can be assessed by the owners. We will not, therefore, consider their interests in this paper.

Employees in general have an interest in the continuance of consumption opportunities, which may imply a short-run advantage from requiring the continuance of the firm in its existing industry, with at least its existing capacity, i.e., they may have a short-run interest in the maintenance of physical capital intact. It may be that this provides a constraint which should properly be recognised in accounting models. In the long run, however, the survival of a business, and consequently the provision of consumption possibilities to participants in it, usually depends on its success in adapting to the changes in demand in a dynamic capitalist economy. Such adaptation would, we believe, be impeded, rather than helped, by the imposition of a physical capital maintenance constraint. If we are correct, employees would not, then, be well served by the maintenance of capital [16].

Most of the literature on accountancy has been concerned with the interests of the equity investor group. Owner managers may derive utility from their ownership in a variety of ways but have been excluded from this analysis, which deals solely with the position of equity holders who are exclusively investors. The latter must derive the major part of their utility from shareholding from the cash flows emanating from their investments. Any other satisfactions obtained from shareholdings must be entirely dependent on personal preferences and are therefore excluded from our discussion; we assume that investors are concerned only with the total cash flow from their portfolio of investments and with the risk characteristics of that flow. (This assumption also underlies almost all of the theory of modern portfolio analysis.)

An investor has available a wide range of securities and goods in which he can invest. He is the only person who can arrange his personal investment or disinvestment in a manner he believes will maximise his utility from his personal consumption, or from the consumption of others for whom he intends to provide, for he is the only individual with recourse to his private utility function. On this basis the adoption of a maintenance of capital (i.e., maintenance of value) concept as the basis for a *practical* constraint representing his interests appears absurd! If a shareholder wishes to continue to invest, the only justification for retaining his money within a company is that the retention is expected to generate, for distribution to him, cash flows greater than or equal to those which he expects to obtain from investing an amount equal to the retention in the most lucrative alternative of equivalent risk. If the investor wishes to disinvest in his portfolio, he should require that capital be maintained intact only if that action is expected to increase the current share price sufficiently to repay the amount of the retention and transactions costs on share sale. Such an increase is only likely to arise if the retention is expected by investors in general to yield a stream of cash greater than is expected from the investment of an equivalent amount of cash in other securities (or capital goods) of equivalent risk. It is not necessary to hypothesise a precise share valuation model for present purposes, for the logic of the position we advance would be valid under a variety of such models and is widely accepted as being realistic. The FASB document *Tentative Conclusions on Objectives of Financial Statements* [17] provides the same assessment of investors' objectives with fairly extensive supporting discussion. Capitalist economies demonstrate changing patterns of demand for goods and services over time as a consequence of changing tastes and technologies. It seems unlikely that maintenance of past levels of investment in the same firms or industries will provide the greatest cash flows to investors, in view of the existence of growing and declining industries in the dynamic modern world. One is forced to the conclusion that the maintenance of capital intact does not represent a practical constraint which represents investors' requirements, whether capital is defined in terms of value or of physical property.

We shall now consider the position of the loan creditors. Their short and medium term interest frequently lies in the continued survival and liquidity of the enterprise. They may therefore need some kind of capital maintenance procedure to protect their interests, and this is certainly the legal attitude as seen in both legislation (e.g., Companies Act 1948, sections 66–71) and cases (e.g., *Australasian Oil Explorations Ltd v Lachberg*, C.L.R. 119). In law, limited liability is a privilege that obliges companies to maintain the value of capital as far as possible. Lord Watson, in the classic case of *Trevor v Whitworth* (1887), pointed out that 'persons who deal with, and give credit to a limited company, naturally rely upon the fact that the company is trading with a certain amount of capital already paid... and they are entitled to assume that no part of the capital which has been paid into the coffers of the company has been subsequently paid out, except in the legitimate course of its business.' Other cases indicate that the whole of the subscribed capital should remain, as far as practicable, available for the discharge of liabilities. In practice, the difficulty of making a legal assessment of the value of capital, and thus maintaining it, has proved to be very great [18].

So far as loan creditors are concerned, the basic aim must surely be to require the retention in the business of sufficient resources to generate the cash flows necessary for the return of loan principal and for the payment of interest. Such requirements can be, and frequently are, specified in the loan agreement. To the extent that this is so, the loan creditors require no additional protection from constraints arbitrarily imposed in the accounting model. If protection is needed, it may best be provided by establishing a required relationship between available resources and the total amount owed to the creditors rather than by maintaining capital intact, for 'capital' is not defined by reference to liabilities [19]. We recognise that such an innovation would require both the specification of the relationship and the basis of valuation of the resources identified in that relationship. It is, however, interesting to note that the EEC Second Directive specifies a requirement of the type suggested above, to be applied to investment companies.[1] In the *long run* it seems likely that the return on lending money will be greatest if capital is allowed to move to the use generating the greatest wealth for a given level of risk, so eventually loan creditors also seem likely to be best served by allowing mobility of capital resources, *provided that* their immediate interests are safeguarded. The latter are unlikely to require the maintenance of capital intact, however, and are more likely to be associated with acceptable levels of gearing. One could argue that the loan creditors already impose gearing constraints on debtor firms and that these are reflected in the financial statements of such firms; they would not then require further modelling by the imposition of a practical capital maintenance constraint.

In the case of short term creditors the problems are not dissimilar to those of the loan creditors, although there is seldom any explicit loan agreement. In this case, the most desirable action for the debtor business may be to maintain liquid funds related to the level of indebtedness rather than to maintain capital intact. We are, then, drawn to the same conclusion as in the long term case—that the protection of creditors probably requires gearing or liquidity constraints and not the maintenance of capital intact. The latter cannot guarantee against losses, does not protect against inadequate initial share capital, and cannot avoid the possibility of a bad choice of assets structure. Such difficulties could at least be alleviated by putting the emphasis on liquidity and gearing.

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[1] Article 15, para. 4(a) of the Directive, states that total assets of such companies should be at least one and a half times their total liabilities.

The legal position of creditors is clearly interrelated with the question of distributable profit, and this in itself has taken up much attention. E. A. French [20] provides a summary of the former position, pointing out that the essential legal requirement is that dividends should not be paid if to do so would render the company insolvent. He considers that any legal constraints set by reference to 'something in the nature of profit' are 'weak'. This appears to support our position. The fact that there is no clear legal definition of distributable profit highlights once more the difficulty of protecting creditors on existing conventions. It seems likely that the development of this area of law awaits a solution from accountants, and that a major obstacle to this solution may be the traditional emphasis on the maintenance of capital concept as a basis for the measurement of net revenue.

The business contact group appears to have a clear but unquantifiable interest in the continuance of a business. Suppliers often commit themselves to large expenditures in anticipation of continued orders, while in some industries customers wish to have a future supply of spare parts for repairs. Such continuity could possibly be helped by enforcing a system of capital maintenance but the quantification of the outsider's interest in each case seems to be impractical. Even if it could be quantified, there is no reason to think that it would not vary over time and circumstance in a way that had no relation to a crude accounting measure of capital maintained. In the longer term the demands from customers (and the prices which they are able to pay) for the goods or services of a firm will be dependent on market forces. We have already noted that this implies changing patterns of reward for the use of resources in a particular industry. Such changes will inevitably work through to suppliers and affect their asset structure as they respond to changes in the relative rewards to resources with different uses. It appears that the long term interests of the business contact group, also, are likely to be enhanced by the mobility of capital so that it is unlikely to require that capital be maintained intact.

The above examination of the interests of the people, or entities, directly associated with the firm, indicates that none of them would, logically, impose a general long-term constraint which ensures that the monetary or the physical capital of a firm should be maintained intact over time. Disinvestment from obsolescent assets seems to be desirable in a dynamic economy with changing tastes and technologies, implying a need for reallocation of capital resources. If that is the case, the concept 'maintenance of capital intact' is an abstraction which does not model the real world. Such a conclusion does not, of course, necessarily lead to the rejection of the abstraction as a basis for the measurement of income.

Part 4

A useful abstraction?

'Maintenance of capital intact' is likely to be a useful concept for 'net revenue' measurement only if it satisfies two conditions. It must be associated with a concept meaningful to the reader of accounting data and the reported measurement of which helps him to make his economic decisions, including those concerning consumption, sharing of value added in the firm, and investment and disinvestment in particular enterprises. It must also be measurable with sufficient accuracy to justify the cost of the accountancy exercise, given the type and reliability of information available from the use of other concepts as a basis for reporting.

We doubt that many economists or businessmen would consider that the concept was not a useful basis for the measurement of 'net revenue' *under perfect markets and certainty*. In that strange world, beloved of theoreticians, we could transfer wealth between periods by the use of the single risk-free borrowing and lending rate of interest. It would be possible to maximise the utility derived by those involved with the firm by maximising present wealth represented by the business, expressed as net present values (found by discounting future cash flows at the risk-free rates applying to future periods [21]). Obviously measures of physical capital would be redundant in such a world, for all capital investment must logically be made to generate future consumption opportunities (whether for employees, investors or others), which could be defined by reference to increases in wealth measured using 'the concept' with Net Present Values. It seems that maintenance of capital intact would be a useful basis for measurement of 'net revenue' under assumptions of certainty and perfect markets. We therefore accept that the first of the above stated requirements is met in the artificial world defined by such assumptions.

The real world is uncertain. Economic matters are, on the whole, at least as uncertain as are the rest of our affairs so that the above justification of the concept, which was based entirely on an ability to predict accurately cash flows and interest rates, becomes dependent on the accountant's ability to derive adequate proxies for the present value information required. Only a foolhardy person would claim to be able to forecast accurately future cash flows and interest rates. Obviously each individual's estimates are dependent on his own expectations. Further, under uncertainty, rates used for discounting are likely to differ significantly between the firm, the body of investors or employees concerned and between individual investors and employees. Each reader of accounts should logically be interested in his personal wealth: yet the sum of personal wealth derived from the firm is (with differing discounting rates) different from the total wealth as calculated using the rates available to the firm. This even occurs in the case in which all cash inflows are distributed by the firm during each period. Thus:

$$\sum_{j=0}^{n} \frac{C_j}{(1 + r_f)^j} \neq \sum_{p=1}^{m} \sum_{j=0}^{n} \frac{C_{jp}}{(1 + r_p)^j}$$

where there are n periods in the firm's time horizon and m investors or other recipients of net cash from operations. C_j is the cash from operations received by the firm in period j; C_{jp} is the cash paid to recipient p from the sum C_j; r_f is the firm's interest rate; and r_p is the discounting rate for individual p. It is assumed that rates of interest differ between individuals and the firm. In that case the wealth measures on each side of the inequality sign would only be the same by coincidence. Thus measures of wealth for the firm as a whole would not permit the calculation of measures of personal wealth. The latter, which the reader of accounts may wish to estimate, can only be calculated by reference to his own estimates of C_{jp} and of r_p. This topic has been further explored by K. Peasnell [22] and M. Bromwich [23]. They both come to conclusions similar to the above.

Of course, accountants do not use discounted cash flow estimates for reporting. They use more objective evidence in the form of prices of assets consumed or owned and of services consumed to generate the aggregate data which they insert in their financial statements. It would be very surprising if such aggregates approximate the wealth of a firm on a DCF basis, however the market prices were derived, i.e., whether by reference to past or present market values. Even 'deprival values' [24], more recently called 'value to the business' [25], do not necessarily sum to meaningful totals because of the existence of interdependent assets where the deprival value of the total set of assets is less than the sum of the deprival values of the individual assets [26]. Similar observations also apply to the aggregation of replacement costs [27]. It seems that the only meaningful aggregate is the sum of sale values [28]. (Even then we would derive different values under different assumptions, e.g., the sale value of the firm as a whole would usually be different from the sum of asset sale values under assumptions of piecemeal disposal. Similar arguments apply for subsets of assets.) As firms are not generally holding fixed capital assets in order to sell them, as opposed to selling the outputs from their services, the use of the sale values of such assets would generally be considered to be inappropriate as a measure of the wealth represented by the ongoing business. (Readers will, no doubt, note that most fixed assets cost more in the market in which the firm can purchase them than they will fetch in the market in which it can sell them.) The sum of historical costs, i.e., of past market prices, seems unlikely to provide a better measure of wealth than do current market prices. This seems to be so widely agreed that there is no point in discussing it at length [29]. We have argued that accountants measure by reference to objective evidence concerning assets, but that the aggregation of asset values excluding goodwill, the major intangible asset, may not provide totals which (after the deduction of liabilities) approximate the worth of the firm under any plausible assumptions.

As mentioned above, even if we could find a sensible figure of the worth of tangible assets for the total firm, the omission of goodwill means that we have not usually found the worth of the firm and hence the value of capital. If goodwill remained constant we could ignore it in calculating income, for opening and closing capital would be understated by an identical amount. Such a situation is only likely to arise in a static environment which we would not recognise. The value of goodwill usually changes over time, but accounts cannot identify or report the changes in ways which would be based on objective data and still be helpful. The use of stock market values is unlikely to be a satisfactory solution to this accounting problem. An aggregation of such marginal values may not provide a correct value of the total shares of the firm. Stock market prices are based on expectations derived from information from a variety of sources, including company accounts. The use of such values in accounts would be unhelpful, merely providing feedback based on the prices which were in part generated by expectations of the feedback!

We observe that, under uncertainty, the accountant is unlikely to derive the capital value of the firm by the conventional procedures open to him. It follows that he is unlikely to be able to measure the retentions necessary to maintain it intact. Attempts to measure by reference to a set of physical resources seem equally doomed to failure. Physical property is heterogeneous and the utility to be derived from specific units of it seems likely to change over time with changing technology and tastes. Similarly, the prices at which the services of such property can be sold are also likely to change with tastes and technology. It seems to us that maintenance of physical assets intact does not imply the maintenance intact of the value in the firm. We agree with Staubus [30] on this point. Our conclusions are as follows:

(i) 'Capital' cannot usually be measured with a reasonable expectation of accuracy.
(ii) Following (i), the retentions necessary to achieve maintenance of capital intact cannot be identified in any precise and objective manner.
(iii) As a result of (ii), the concept of maintenance of capital intact does not usually lead to a measure of 'net revenue' which can be considered to be a reliable measure of the change in the worth of a business.

It appears that the second of the requirements stated at the commencement of this section may not be met. The case for the use of the concept cannot therefore be proved. We would still urge businessmen to use it, however, if:

(a) it is the only concept available as a foundation for measures of 'net revenue', for even deficient information may be better than none;
(b) it is better conceptually than alternatives and no worse from a practical point of view, for more appropriate information of comparable quality must be better than less appropriate information; or
(c) it provides information of value which justifies its use in addition to other methods.

Apparently theoreticians [31] and practitioners have turned their faces against multi-dimensional statements. We regret this, but recognise it and, for the present, proceed to consider only issues (a) and (b) above. If we can refute (a), we will cast doubt upon the validity of the concept as a necessary theoretical basis for income measurement. A comparative study of alternative theories would require a lengthy addition to this paper, so discussion of the issues shown under (b) will be left to a subsequent analysis.

Part 5

A necessary abstraction?

Our discussion now proceeds to consider whether the concept is the only one available as a basis for the measurement of performance. As indicated above, if no feasible alternatives exist we are led to adopt the concept on the ground that it is better than nothing! We do not have to look far in the literature before discovering that a recurring theme runs through accounting practice, that of the need to match costs to revenues. This is so important that is has been identified, under the name 'accruals', by SSAP 2 [32] as one of the four 'fundamental accounting concepts'. Many authorities treat 'matching' as if it represented a version of maintenance of capital intact [33]; we believe that matching can be interpreted as being based on an alternative concept of 'net revenue'. There is, in addition, at present a body of opinion which stresses cash flows during a period as the basis for measuring enterprise performance. We shall consider both 'matching' and 'cash flow' models to ascertain whether they appear to represent alternative theories which can be implemented in practice.

'Matching' is a transactions based approach, in the sense that it attempts to measure the increment in wealth derived from defined *transactions* rather than the increment in wealth which has arisen during a defined *period* (as is the objective of the maintenance of capital approach which we have identified). The 'matching' process is usually considered to involve two separate steps:

> (1) Outlays of wealth incurred to acquire goods or services sold (including commitments which have not yet been met) are 'matched' against the sales revenue they generate to identify the increment of wealth derived from the series of identifiable transactions culminating in the sale. The process therefore attempts to measure increments of wealth resulting from *transactions completed* (by eventual sale) during the period. Direct costs of acquisition of stocks and direct processing costs clearly fall within the groups to be matched by reference to the pattern of derived revenue. The costs incurred to acquire and maintain fixed assets used in a production process are, in our opinion, more in the nature of overheads and should be treated under step 2 of the process.
>
> (2) Outlays of wealth incurred to provide for the continuance of the operations of the business during the period (e.g., general overheads such as rent of premises, depreciation, administrative costs, etc.) are matched by reference to the period in respect of which the outlays were made.

The matching under (1) attempts to establish the increments of wealth, i.e. surplus on transactions, derived from the series of transactions terminating in the sales completed during the accounting period. Matching under (2) attempts to establish the necessary business consumption of the surplus from the transactions under (1), so the outlays identified must be deducted from the surplus on transactions terminating in sales before deriving a measure of the increment of wealth remaining for owners (i.e., net revenue). Similarly, because of prudence it is usually thought to be correct to deduct from the current surplus of gross receipts over costs any amounts of past or committed outlays which are unlikely to be recovered from the future sale of the resources involved. This, in essence, requires that anticipated losses of wealth resulting from uncompleted transactions should be treated as consumption of the surplus on transactions completed during the period in which the loss is identified: although the matching concept does not admit the recognition of anticipated gains from uncompleted transactions. The approach discussed above is illustrated in the tabular statement and notes in the Appendix.

At any point in time there are resources obtained from past outlays which have not yet been converted into sales revenues. These outlays, being in effect the costs incurred to achieve future cash inflows (or future cash savings), are shown on the Balance Sheet. Generally, the difference between the aggregate of the figures of such unattached costs and of the liabilities of the business is called 'capital'. It is important to realise that this accounting figure is not a figure of capital in the sense in which we have used that term, i.e., it is not a figure of the value of the firm. 'Matching' does not attempt to value assets so it does not attempt to generate measures of 'capital' in the sense in which we have defined that term [34]; instead it involves a transactions-based measurement of increments of wealth. It does not attempt to determine the wealth generated during a period but instead to measure the wealth generated by transactions completed during the period. Sales values represent either gross cash inflows from operations during the period or near cash assets which, for practical purposes, can be considered to be cash equivalents. Under the historical cost accounting form of matching, the deduction of the associated costs aims to identify the surplus cash generated by the series of transactions terminating in the sale [35]. (Current purchasing power accounting is the same measurement but with cash figures converted to constant terms.) This process does not involve 'valuation' but merely comparison of inputs and outputs, so far as they can be related to each other. Essentially 'matching', i.e., 'accruals' accounting, analyses gross revenues (i.e., cash, or cash equivalents, received) into return of past outlays and the surplus generated by those outlays. This is explained well in the FASB discussion paper on *Tentative Conclusions on Objectives*... [36]. 'Matching' does not rest on the concept of measuring changes in wealth, or well-offness, *during* a period (which is the maintenance of capital intact theory as we understand it) but rather on measuring changes in wealth resulting from specified transactions. It involves, then, a completely different conceptual base, i.e., a different theory. As this theory is the one which underlies most of current practice (e.g., historical cost accounting) it appears that, however imperfectly, it represents a feasible alternative to maintenance of capital intact for the purpose of income measurement in practice. As mentioned above, a comparative study of the alternatives will be attempted in a subsequent paper.

Cash flow accounting can also be regarded as an alternative (with a different theoretical basis) to capital maintenance for assessing performance.

Such systems (e.g., those of G. H. Lawson and T. A. Lee) [37] are not intended to measure the income of an enterprise, except in an indirect fashion. It is claimed that they help the reader to assess survival prospects, ability to meet interest and dividend commitments, and distributable cash per share. They may involve an element of projection, and possibly a discounting process. One of the 'by-product' advantages of discounting is that goodwill is automatically included as an asset because the discounted future cash flows now reflect the contribution of goodwill. (There are conceptual and practical difficulties in this approach, however, which have been discussed above.) In Lee's scheme, the price/earnings ratio of conventional accounting is replaced by a 'price/discounted-flow' ratio, which he regards as more reliable as an investment indicator; this is disputed by Ashton [38], because of difficulties with the choice of discount rate, but it seems an interesting attempt to reflect differences between market expectations and management projections. The element of projection in the suggested schemes could be criticised as being even more subjective than any of the accruals based systems for measuring income, whether or not they include an inflation adjustment, and is more open to manipulation than conventional capital maintenance based approaches, e.g., Sandilands' CCA [39]. Cash flow methods appear, however, to concentrate on liquidity rather than on income measurement, and this is an important element in the assessment of a business. Much research remains to be done, and the difficulties of evaluating aggregate capital may well be enough to justify acceptance of some disadvantages of cash flows.

We have indicated above that there are alternative theories to that of the maintenance of capital intact. This does not prove that the latter is a concept which is unnecessary for practical accounting, for such a conclusion must await subsequent comparative studies. It does, however, suggest that the concept may be unnecessary so that the present extensive reliance on it could be unjustified.

Part 6

Conclusions

This paper has considered the economic theory underlying the maintenance of capital intact and has observed that many economists do not support it as a basis for practical income measurement. An examination of the needs of those closely involved with the firm implied that the concept does not model constraints logically imposed in the interests of participants in the firm. We have argued that such participants would benefit most, in the *long* run, from a free movement of capital between firms in response to changing market demands. The concept does not, therefore, seem to model any long term phenomenon or need. 'Maintenance of capital intact' should, therefore, be perceived merely as an abstraction adopted for the purpose of income measurement. Furthermore, although maintenance of capital intact seems to be a helpful abstraction from the point of view of considering personal income under certainty, it appears to be impossible to approximate the required measure of capital in a modern large scale business operating under uncertainty.

If the concept is the only theoretical basis available, we would be correct in retaining 'maintenance of capital intact' as the basis for our accounts. We have observed, however, that both 'matching' (transactions based) and 'cash flow' approaches appear to be based on alternative theories. The need for the concept is, therefore, in doubt. We contemplate conducting comparative studies to try to carry this analysis to its ultimate conclusion. There appears to be a justified doubt as to the supremacy of the concept and we think that it would be unwise to base radical departures from existing practice on 'capital maintenance' concepts before the issues have been further clarified.

References

[1] J. R. Hicks, *Value and Capital* (2nd Edition, 1946).

[2] FASB, *Tentative Conclusions on Objectives of Financial Statements of Business Enterprises* (December 1976) para. 16.

[3] FASB, *Conceptual Framework for Financial Accounting and Reporting: Elements of Financial Statements and their Measurement* (December 1976).

[4] See Part 2 of this paper.

[5] E. S. Hendriksen, *Accounting Theory* (3rd Edition, 1977) page 146.

[6] J. R. Hicks, *op. cit.*, page 172.

[7] T. A. Lee, *Income and Value Measurement* (1974) page 13.

[8] R. R. Sterling, *Theory of the Measurement of Enterprise Income* (1970).

[9] Irving Fisher, *The Theory of Interest* (1930).

[10] Relevant extracts from Hayek, Pigou and Hicks can be found in *Readings in the Concept and Measurement of Income* edited by R. H. Parker and G. C. Harcourt (1969).

[11] J. R. Hicks, *American Economic Review*, May 1974, page 316.

[12] J. R. Hicks, *Capital and Time* (1973), page 184.

[13] See note 8.

[14] See note 3, pages 123–124.

[15] G. J. Staubus, 'Price Level Accounting: Some Unfinished Business', *Accounting and Business Research*, Winter 1975.

[16] A more rigorous analysis supporting this position is precluded by lack of space, but may be the subject of a later paper.

[17] See reference 2.

[18] For example, see E. A. French, 'The Evolution of the Dividend Law of England', pp. 316–321 of *Studies in Accounting* edited by W. T. Baxter and S. Davidson (1977).

[19] I. W. Symon *et al., The Balance Sheet: What is its Function?* (1972) paras 63 to 67.

[20] See note 18.

[21] Under certainty and perfect markets the highest NPV will enable provision of the highest pattern of consumption, irrespective of the pattern chosen or the recipients of that consumption.

[22] K. V. Peasnell, 'The Present Value Concept in Financial Reporting', *Journal of Business Finance and Accounting*, Summer 1977.

[23] M. Bromwich, 'The Use of Present Value Valuation Models in Published Accounting Reports', *Accounting Review*, July 1977.

[24] See W. T. Baxter, *Accounting Values and Inflation*, McGraw-Hill, 1975, chapter 12, for a definition of, and discussion on, deprival values.

[25] Sandilands Report, i.e. *Report of the Inflation Accounting Committee*, HMSO, Cmnd, 6225, 1975, paras. 219 and 562.

[26] For a lucid discussion on this point see H. C. Edey, 'Deprival Values and Financial Accounting' in H. C. Edey and B. S. Yamey (eds) *Debits, Credits, Finance and Profits*, Sweet and Maxwell, 1974.

[27] For an expansion of this point see J. R. Grinyer and R. W. Lewis, 'Valuation and Meaningful Accounts', *Accounting and Business Research*, Autumn 1972, page 278. H. C. Edey, *op. cit.* also discusses the matter.

[28] See J. R. Grinyer and R. W. Lewis, *op. cit.*

[29] See for example, E. S. Hendriksen, *Accounting Theory*, Richard D. Irwin, 3rd edition, 1977, pages 270–271.

[30] See note 15 above.

[31] See American Accounting Association, *Statement on Accounting Theory and Theory Acceptance*, 1977, pages 37–39.

[32] Statement of Standard Accounting Practice No. 2, 'Disclosure of Accounting Policies'.

[33] See note 3.

[34] It could be argued that matching methods, since they involve the carrying forward of unexpired balances, imply a capital maintenance approach. This criticism does not appear to be valid, because the matching procedure emphasises the Profit and Loss Account, leaving residual balances that do not necessarily sum to a total that provides a meaningful figure of value. The matching method is an incremental approach, and the totals of the unexpired balances have no more than arithmetical validity.

[35] See G. Whittington, 'Asset Valuation, Income Measurement and Accounting Income, *Accounting and Business Research*, Spring 1974, especially page 99.

[36] See note 2.

[37] For a discussion of both approaches see Raymond Ashton, 'Cash Flow Accounting: A Review and Critique', *Journal of Business Finance and Accounting*, Winter 1976, pages 63–81.

[38] *Ibid.*

[39] Sandilands Report (note 25 above), chapter 12.

Appendix

A tabular illustration of 'matching'

Step 1 (See note 'a')		£
Sales revenues		X
Less: Direct product costs		X
Surplus on sales transactions		X
Step 2 (See note 'b')	£	
Less: Organisation overhead costs	X	
Depreciation (See note 'c')	X	
Other 'period' costs	X	
Losses written off	X	X
Residual surplus (*'net revenue'*)		X

Notes

(a) Step 1 indicates the increment in wealth derived from the identifiable transactions culminating in the sales completed during the accounting period. The 'surplus on sales transactions' is analogous to 'contribution' in variable costing.

(b) Step 2 identifies, and deducts from the surplus on sales transactions, outlays which have been incurred in order to maintain and run the organisation during the accounting period. Such costs include all of the ones which cannot be identified with a specific item of future or past sales. Depreciation and amounts written off on 'prudential' grounds are also deducted. The step is analogous to the deduction of 'fixed costs' from 'contribution' in variable cost statements.

(c) Depreciation figures may best be derived by apportioning the total costs of acquisition and use of fixed assets over their useful life by reference to the expected pattern of savings arising from ownership of the assets. This approach is based on an assumption that the services provided by an asset would, in the absence of the asset, be provided by other means at a cost. Thus ownership of the resource avoids a stream of cash payments representing a reduction in wealth. We believe that the practical difficulties associated with apportioning the cost of fixed assets by reference to a stream of future net revenue are significantly greater than those of apportioning on the basis which we have indicated, that the assumption we have made is reasonable in many cases and, therefore, that on both practical and theoretical grounds the appropriate pattern of flows to be used is probably that of the estimated savings from ownership of the asset.

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A Note on the Boundary Values of the Certainty Equivalent Coefficient[†]

Ronald Ma

Robichek and Myers proposed an investor's valuation model, which is based on the present value of expected dividend receipts.[1] In the Robichek-Myers approach, expected future dividends are deflated by certainty equivalent coefficients and capitalised at a risk-free discount rate. A certainty equivalent coefficient reflects an individual investor's perception of and aversion to risk; it converts an expected value into a single certain value of equal utility to the investor. A simple form of the model is given below:

$$PV = \sum_{t=1}^{\infty} \frac{\alpha_t E(\tilde{D}_t)}{(1 + r_f)^t} \qquad (1)$$

where

PV = present value of a share investment;
$E(\tilde{D}_t)$ = expected dividend receipt in period t;
α_t = the investor's certainty equivalent coefficient relating to D_t. The coefficient may vary between periods; and
r_f = risk-free interest rate, assumed to be constant.[2]

In the valuation of uncertain future cash flows, Robichek and Myers limited their discussion to a particular kind of positive flow, i.e. dividends and, except in a very general sense, did not explain how the value of the certainty equivalent coefficient is determined. They specified, however, that its value lies between 0 and 1 (both inclusive) for the risk-averting investor.[3]

The above valuation model has been presented in financial texts, and its use extended to the valuation of risky future cash flows in general.[4] An adaptation of the Robichek-Myers valuation model is the normative investment valuation model presented in the Report of the American Accounting Association 1966–68 Committee on External Reporting.[5] The Report described the certainty equivalent factor (represented by α_{tk}) as follows:[6]

> [The] 'certainty equivalent' factor ... adjusts the expected cash flows (CF_{tk}) to a value such that a given investor (k) is indifferent between CF_{tk} and a cash flow which is certain to be paid.... If the investor is risk averting, α_{tk} will take on values between 0 and 1. If the investor is a speculator, α_{tk}may be greater than 1.
>
> The value of α_{tk} is a function of:
>
> 1. The form and dispersion of the subjective probability distributions of the expected cash flows.

[†] Revised text of a paper presented at a workshop seminar in the Department of Accounting at the London School of Economics on 3 November 1978. I should like to acknowledge the useful comments of Frank Finn, Greg Whittred and a referee of this journal on an earlier draft. The usual disclaimer applies.

[1] A. A. Robichek and S. C. Myers, *Optimal Financing Decisions* (Prentice-Hall, 1965), Chs. V and VI.

[2] This assumption can be relaxed, and the risk-free rate permitted to change over time:

$$PV = \sum_{t=1}^{\infty} \frac{\alpha_t E(\tilde{D}_t)}{\prod_{s=1}^{t} (1 + r_{f,s})}$$

where $r_{f,s}$ is the risk-free rate in period s, $s = 1, 2, \ldots, \infty$.

[3] Robichek and Myers, *op.cit.*, p. 80.

[4] For example, see J. C. Van Horne, *Financial Management and Policy* (Prentice-Hall, 1974, 3rd ed.) and R. C. Higgins, *Financial Management: Theory and Applications* (Science Research Associates, 1977). Some texts do not specify $0 \leq \alpha \leq 1$, for example, C. W. Haley and L. D. Schall, *The Theory of Financial Decisions* (McGraw-Hill, 1973).

[5] American Accounting Association Committee on External Reporting, 'An Evaluation of External Reporting Practices', A Report of the 1966–68 Committee on External Reporting, *Accounting Review*, Supplement to Vol. XLIV, 1969, pp. 79–123. It is implicitly assumed that the future flows have expected values which are positive.

[6] *Ibid*, p. 81. The notation has been adjusted to conform with that used in this paper. The subscript t refers to a discrete time period, and k to a given investor. (Terms in parentheses added.)

2. The attractiveness of the probability distribution to the investor.

Since the case of the risk lover may be treated as an exception to the general rule, the Report too specified an upper and lower bound to the value of α. The weakness of this approach is that it views the stream of expected receipts in isolation. With respect to risky future flows in general, it can be shown that in the context of portfolio theory and related capital asset pricing models the certainty equivalent coefficient lies outside the traditional bounds under certain conditions.

The certainty equivalent coefficient and the capital asset pricing model

Further insight into the certainty equivalent concept can be gained by considering its form in a specific valuation framework. The capital asset pricing model derived by Sharpe[7] and Lintner[8] (and itself an extension of earlier work by Markowitz[9] on portfolio theory) provides one such framework.

Given the assumptions of the capital asset pricing model[10] the expected rate of return on a risky asset j is given by:

$$\begin{aligned} E(\tilde{r}_j) &= r_f + \frac{E(\tilde{r}_m) - r_f}{\sigma_m^2}\sigma_{jm} \\ &= r_f + [E(\tilde{r}_m) - r_f]\beta_j \qquad (2) \end{aligned}$$

where

$E(\tilde{r}_j)$ = the expected return from holding risky asset j for one period;

$E(\tilde{r}_m)$ = the expected return on the market portfolio m;

r_f = the risk-free interest rate, i.e. the return on a riskless asset f;

σ_{jm} = the covariance between the returns on asset j and market portfolio m $= \rho_{jm}\sigma_j\sigma_m$;

ρ_{jm} = the correlation coefficient between the returns on asset j and market portfolio m;

σ_j = the standard deviation of the return on j;

σ_m = the standard deviation of the return on m; and

β_j = a measure of systematic or nondiversifiable risk $= \sigma_{jm}/\sigma_m^2$.

By definition, the expected rate of return on j over a single period is:

$$E(\tilde{r}_j) = \frac{E(\tilde{V}_j)}{P_j} - 1 \qquad (3)$$

where

$E(\tilde{V}_j)$ = the expected dollar amount (including dividends, if any) to be received for holding asset j for one period; and

P_j = the dollar price of asset j at the beginning of the period.

Equating (2) and (3) and solving for P_j:

$$P_j = \frac{E(\tilde{V}_j)}{1 + r_f + [E(\tilde{r}_m) - r_f]\beta_j} \qquad (4)$$

$E(\tilde{V}_j)$ is the expected value of a risky flow. Given that investors are risk-averse, there exists an equivalent certain flow corresponding to $E(\tilde{V}_j)$, whose value differs from $E(\tilde{V}_j)$, such that the market is indifferent between $E(\tilde{V}_j)$ and the equivalent certain flow. Hence the two flows have the same market price. Since P_j represents the present value of $E(\tilde{V}_j)$ discounted at the risk-adjusted rate $E(\tilde{r}_j)$, it must also represent the present value of the equivalent certain flow discounted at the risk-free rate r_f. Let α^* be a market determined certainty equivalent coefficient, which is a weighted average of the certainty equivalent coefficients of individual investors in the market, such that:

$$P_j = \frac{\alpha^* E(\tilde{V}_j)}{1 + r_f} \qquad (5)$$

Consistency between equations (4) and (5) implies:

$$\alpha^* = \frac{1 + r_f}{1 + r_f + [E(\tilde{r}_m) - r_f]\beta_j} \qquad (6)$$

$$= \frac{1 + r_f}{1 + E(\tilde{r}_j)} \qquad (6a)$$

In words, the market determined certainty equivalent coefficient is equal to the ratio of one plus

---

[7] W. Sharpe, 'Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk', *Journal of Finance*, September 1964, pp. 425–442.

[8] J. Lintner, 'The Valuation of Risk Assets and the Selection of Risky Assets in Stock Portfolios and Capital Budgets', *Review of Economics and Statistics*, February 1965, pp. 13–37.

[9] H. Markowitz, *Portfolio Selection: Efficient Diversification of Investments* (Wiley, 1959).

[10] Sufficient conditions include the following: investors are rational (i.e. they are maximisers of the expected utility of terminal wealth), risk-averse and have homogeneous expectations regarding the means, variances and covariances of future return distributions, and capital markets are perfect (i.e. investors can borrow and lend unlimited amounts at an exogenously determined risk-free interest rate).

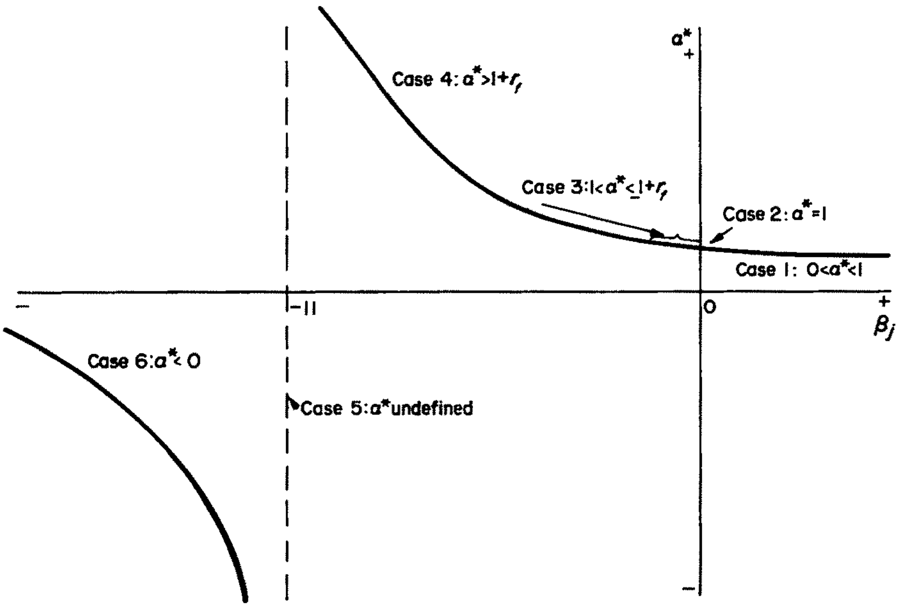

Figure 1.
The relationship between α^* and β_j

the risk-free rate to one plus the market risk-adjusted discount rate.

Given the assumptions that investors have a preference for present consumption over future consumption, are rational and risk averse, the values of r_f and $E(\tilde{r}_m)$ are constrained as follows:

$$r_f > 0$$

$$E(\tilde{r}_m) > r_f, \text{ thus } [E(\tilde{r}_m) - r_f] > 0$$

Since σ_m and σ_j are greater than 0 and ρ_{jm} has a feasible range from -1 to $+1$, β_j can take on positive or negative values, depending on the sign of ρ_{jm}. $\beta_j = 0$ implies that j is the riskless asset f with ρ_{fm}, $\sigma_f = 0$.

The relation between the market certainty equivalent coefficient and risk

The response of α^* to changes in the β_j value is evaluated below by reference to equation (6):

Case 1: Assume $\beta_j > 0$ (i.e. $0 < \rho_{jm} \leq 1$). Since $r_f > 0$ and $E(\tilde{r}_m) > r_f$, equation (6) implies $0 < \alpha^* < 1$.

Case 2: Assume $\beta_j = 0$ (i.e. $\rho_{jm} = 0$), then $\alpha^* = 1$.

When $\beta_j < 0$ (i.e. $-1 \leq \rho_{jm} < 0$), equation (6) can be reformulated as shown in (6b):

$$\alpha^* = \frac{1 + r_f}{1 + r_f - |[E(\tilde{r}_m) - r_f]\beta_j|} \qquad (6b)$$

Case 3: Assume $\beta_j < 0$ and $r_f \geq |[E(\tilde{r}_m) - r_f]\beta_j|$, then $1 < \alpha^* \leq 1 + r_f$.

The situation in which $r_f < |[E(\tilde{r}_m) - r_f]\beta_j|$ is more complex, and α^* can take on different values. Let $d = |r_f - |[E(\tilde{r}_m) - r_f]\beta_j||$.

Case 4: Assume $\beta_j < 0$ and $d < 1$, then $\alpha^* > 1 + r_f$.

Case 5: Assume $\beta_j < 0$ and $d = 1$, then α^* is undefined.

Case 6: Assume $\beta_j < 0$ and $d > 1$, then $\alpha^* < 0$.

For exposition we assume $E(\tilde{r}_m) = 0.20$ and $r_f = 0.10$ in Figure 1. The relationship between the market certainty equivalent coefficient and risk is described by a hyperbola with asymptotes $\alpha^* = 0$ and $\beta_j = -11$.

Some tentative economic interpretation of Cases 1–6 obtained in the above analysis is warranted and is offered below.

A tentative interpretation of cases 1–6

Case 1 comprises the majority of assets in the economy, that is assets whose returns are positively correlated with the return on the market portfolio, hence $\beta_j > 0$. In the context of portfolio theory, the relevant risk of an asset or portfolio is its systematic risk, i.e. that part of its total risk which cannot be eliminated by diversification. Other things being equal, the higher the β_j value the smaller would be α^*, $0 < \alpha^* < 1$.

$\beta_j = 1$ is a special case, where asset j is the market portfolio m with expected return $E(\tilde{r}_m)$, and $\beta_j \equiv \beta_m$. For this case,

$$\alpha^* = \frac{1 + r_f}{1 + E(\tilde{r}_m)}.$$

It is interesting to note that the alleged lower bound, $\alpha^* = 0$,[11] does not exist within the framework of our analysis, since this solution implies an infinitely large β_j (in effect an infinitely large standard deviation of the asset return, σ_j). Strictly, it is correct to state: α^* approaches zero as β_j approaches infinity. α^* can never equal 0.

As explained earlier, Case 2 in which $\beta_j = 0$ refers to a riskless asset. $\alpha^* = 1$ implies that the future flow is certain.

The interesting results are those obtained in Cases 3 and 4, which imply an asset with negative β_j and $\alpha^* > 1$. For an asset in the group belonging in Case 3, $E(\tilde{r}_j)$ is positive, i.e. $E(\tilde{V}_j) > P_j$ (both positive) while for an asset belonging in Case 4, $E(\tilde{r}_j)$ is negative, i.e. $E(\tilde{V}_j) < P_j$ (both positive). An example of such assets is provided by Homestake Mining, the oldest and largest goldmining firm in the United States, which has a negative β.[12] Its expected return is valued by risk-averse investors more highly than a certain return because of its contribution to the reduction of portfolio risk, hence $\alpha^* > 1$.

The following illustration is consistent with Case 4. Suppose a project offers an attractive return but there is a possibility of a large loss of, say, \$200,000 with an associated probability of 0.01, and an investor can insure against the loss by paying a premium of \$2,500 to an insurance company. The insurance is analogous to a notional investment with a current market price of \$2,500 and a mathematically expected value of \$2,000, thus by definition (see (5)) $\alpha^* > 1 + r_f$. Some readers may object that this form of investor behaviour is ruled out by the risk-averse investor assumption. However, the similarity of the insurance to a gamble is deceptive. The state-contingent nature of the insurance claim distinguishes it from the gamble with its state-independent outcome.

Case 5 represents an anomalous situation, in which $E(\tilde{V}_j) = 0$, i.e. $E(\tilde{r}_j) = -1$. Thus the denominator in the expression on the RHS of (6a) equals 0, the value of α^* is undefined and no economic interpretation can be made. However, assets implied by Case 5 would have extremely small negative betas, as shown below.[13] These small beta values are intuitively implausible,[14] and it is believed that such assets do not exist under equilibrium.

Assumed Values		
r_f	$E(\tilde{r}_m)$	β_j implied by Case 5
5%	15%	−10.5
10%	15%	−22
10%	20%	−11

The analysis derives the result, $\alpha^* < 0$, for Case 6. But assets implied by Case 6 would have smaller negative expected returns and smaller negative betas than assets implied by Case 5. Since it is believed that Case 5 defines the lower limit of $E(\tilde{r}_j)$ which can exist, the assets implied by Case 6 (similar to assets implied by Case 5) do not exist under equilibrium.

Conclusion

The certainty equivalent approach to asset valuation stems from a concern to model the individual investor's decision processes. Some writers stated that the certainty equivalent coefficient, with respect to risky future flows in general, takes on a value between 0 and 1.

The analysis in this note made use of a partial equilibrium theory of capital asset pricing under conditions of uncertainty. This is the so-called capital asset pricing model, a single-period mean-variance approach, which explains the relationship between asset prices and risk in the market place. In the context of the capital asset pricing model *a priori* restrictions on the boundary values of the certainty equivalent coefficient cannot be specified. The value of the market determined certainty equivalent factor α^* is a function of the relation between the returns on asset j and the market portfolio m, as summarised below:

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[11] For example, see Robichek and Myers, *op. cit.*, p. 80.

[12] See J. C. Francis, *Investments: Analysis and Management* (McGraw-Hill, 1972), p. 271. See also footnote 14.

[13] The calculation of the β_j values in the third column is based on the expression representing the denominator on the RHS of (6b), which equals 0 for Case 5.

[14] For example, Homestake Mining's beta coefficient is −0.17. Francis, *loc. cit.* The results of a market model regression on over 900 industrial companies in Australia from 1958 to 1973 reveal seven companies with negative betas, with the following values: −0.03, −0.05, −0.24, −0.29, −0.33, −1.22 and −4.66. See P. Brown, 'Market Model Relationships in Australia' in R. Ball, P. Brown, F. J. Finn and R. R. Officer, *Share Markets and Portfolio Theory: Readings and Australian Evidence* (University of Queensland Press, forthcoming).

$$\begin{aligned} 0 < \rho_{jm} \leq 1,\ \beta_j > 0,\ &\text{then } 0 < \alpha^* < 1 \\ \rho_{jm} = 0,\ \beta_j = 0,\ &\text{then } \quad \alpha^* = 1 \\ -1 \leq \rho_{jm} < 0,\ \beta_j < 0,\ &\text{then } \quad \alpha^* > 1, \text{ or theoretically } \alpha^* \text{ may be undefined or negative.} \end{aligned}$$

An unexpected result is that the alleged lower bound solution, $\alpha^* = 0$, does not exist within the framework of the analysis.

Risk-return preferences vary across investors, and hence the results of the preceding analysis cannot be applied directly to asset valuation at the level of the individual investor. Below the results are *extended by analogy* to obtain some insight on his investment decision process. The individual investor typically holds a personal, unique, portfolio of risky assets, including the value of his future earning power (i.e. human capital). For the individual investor considering the addition of a risky asset j, the appropriate certainty equivalent factor α in his present value decision model is a function of the degree of dependence between the returns on j and his personal portfolio p. When $0 \leq \rho_{jp} \leq 1$, then $0 < \alpha \leq 1$. However, if $-1 \leq \rho_{jp} < 0$, the results from the analysis suggest that α is greater than 1, but theoretically α can be undefined or negative. In this situation, α may be difficult to estimate and some other approach to asset valuation is indicated.

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A Review of the Translation Debate

C. W. Nobes

There are many linked but separable matters which might reasonably be included within the problem of currency translation. The concern of this article will be mainly with the translation for consolidation of foreign currency balance sheet items, and the relationship of this to adjustments for specific or general price changes. This leaves the translation of income items and the treatment of foreign currency transactions largely untouched. However, the bulk of controversy and past discussion has been in the area of the translation of balance sheet items and its effects.

I intend here to review critically the premises, arguments and conclusions of academic and professional bodies on both sides of the Atlantic. The literature contains much to mislead the unwary: inconsistent premises, confused argument and straightforward errors of definition. I hope to make it clear how the various issues in the translation debate are connected, and how and why writers differ.

Consolidation and translation

Many of the differences in approach suggested by accountancy bodies and writers stem from differences of view with respect to the purpose of consolidation and translation, and indeed the purpose of financial statements. In some cases, there seems to be little consideration for any underlying principle. Such fundamental confusion has been noted by several writers (e.g. Parker, 1970; Patz, 1977, 1).

In *Accounting Research Study No. 12* (ARS12), Lorensen suggests that translation is a 'measurement conversion process' which should, therefore, preserve the original accounting principles (AICPA, 1972). Many of the criticisms of translation methods are really criticisms of the results of translation, which are imperfect because of the original accounting principles. Further, some arguments in favour of particular methods involve attempts to 'improve' the original principles by taking account of inflation or the *future* effects of a devaluation. For example, one American writer suggests that, when choosing a currency translation method, 'selection... should be based upon the most probable (economic) impact of a movement in exchange rates' (Smith, 1978). Since most systems of accounting in use, particularly historic cost which was the context of the above quotation, do not intend to reflect economic reality, the suggested selection criterion seems somewhat bizarre.

More generally, much of the argument for and against particular methods, on both sides of the Atlantic, seems to be based on the acceptability of their effects on the consolidated historic cost profits of large companies under the exchange rate and inflation conditions that exist in that particular country at that particular time. Partly for this reason, there are several recent writings in the US (where the temporal method has been in use) against the temporal method (e.g. Smith, 1978; Seidler, 1978).

It should be noted that the next five sections are written in the context of historic cost accounting. Even if this is seen as an unattractive context, it is fairly clearly the one that most multinationals have been and still are in.

Definitions and recent history of methods

One of the problems with the definition of translation methods is that many of them have, in practice, been impure versions of more fundamental methods. However, there might be said to be four underlying translation methods on which variations have been built.

The *closing rate* method translates all balance sheet items at the rate ruling on the balance sheet date (which will be referred to as the 'closing' rate, not the 'current' rate which can be ambiguous). The other three methods involve a mixture of closing and historic rates. The *monetary/non-monetary* (MNM) method uses closing rates for monetary assets and liabilities, and the historic rates relevant to the date the balance was established for other balances. The *current/non-current* (CNC) method uses closing rates for current assets and liabilities, and the relevant historic

Table A
Translation Rates used for Balance Sheet Items Under Historic Cost

	Closing rate	*CNC*	*MNM*	*Temporal*
Fixed assets and long term investments: cost	C	H	H	H
Stocks and short-term investments:				
cost	C	C	H	H
market	C	C	H*	C
Debtors	C	C	C	C
Cash	C	C	C	C
Long-term debt	C	H	C	C
Current liabilities	C	C	C	C

C = closing rate
H = historic rate

*Some variants of MNM translate current items held at NRV using the closing rate

Table B
An Example of Translation

Foreign HC balances in Picos	*Balances*	*Closing Rate* £	*CNC* £	*MNM* £	*Temporal* £
		Translated Balances for Consolidation			
10,000	Fixed Assets	5,000	2,500	2,500	2,500
3,000	Stock (Cost)	1,500	1,500	1,000	1,000
2,000	Stock (NRV)	1,000	1,000	667	1,000
3,000	Debtors	1,500	1,500	1,500	1,500
1,000	Cash	500	500	500	500
19,000	Total Assets	9,500	7,000	6,167	6,500
12,000	Equity	6,000	4,500	2,667	3,000
4,000	Loans	2,000	1,000	2,000	2,000
3,000	Creditors	1,500	1,500	1,500	1,500
19,000	Total Capital	9,500	7,000	6,167	6,500

Historic rate for fixed assets and loans: 4 picos = £1
Historic rate for stocks: 3 picos = £1
Closing rate: 2 picos = £1

rates for others. The *temporal* principle is that translation rates should be determined by the measurement basis. Balances carried at historic cost will be translated using the relevant historic rate; balances carried at present or future values will be translated at the closing rate. The effect of these definitions is summarised and illustrated in Tables A and B.

It can be seen that, under a system of historic cost accounting which did not allow revaluation, the MNM method would be the same as the temporal method, with the exception of such current assets as inventory held at net realisable value (NRV). In practice, some variants of the MNM method have translated current assets held at NRV at closing rates.

As far as current value (CV) accounting is concerned, the temporal principle would clearly give the same results as the closing rate method. Indeed, if the date on which balances are established under a CV system is taken to be the balance sheet date, the MNM method might also give the same result. The original writings are not entirely clear on this point.

Attempts at understanding the nature and effects of these multitudinous translation methods have not been assisted by the evident confusion even in high places. For example, *Accountancy* (published by the Institute of Chartered Accountants in England and Wales) recently contained an article misleadingly describing the monetary/non-monetary method as the temporal method (Kettel, 1978); whereas *The Accountant's Magazine* (published by the Institute of Chartered Accountants of Scotland) carried an article wrongly describing the current/non-current method as the temporal method (McMonnies and Rankin, 1977). Further, the 1978 *Survey of Published Accounts* (ICAEW, 1979, p. 50) states incorrectly that the temporal method 'is the use of the historical exchange rate ruling at the date when the asset or liability was acquired or the book value established'. This is wrong for liabilities and misleading for assets. Even a distinguished American textbook on accounting theory can quite erroneously report that 'ARB No. 43 also recommends that capital stock, long-term debt and long-term receivables should likewise be translated in terms of the exchange rates prevailing at the date of the balance sheet' (Hendriksen, 1970). In fact, ARB 43 recommended historic rates.

The recent vacillatory history of translation theory and practice reflects this confusion and the expediency mentioned before. A brief chronology is presented as Table C. As for the dates of origin of the various methods used, the closing rate seems to be the oldest. It was certainly used by British accountants for overseas branches in the nineteenth century (e.g. Plumb, 1891). Long periods of fixed exchange rates remove most of the arguments against the closing rate method. As Table C shows, the CNC method was formally recommended in the United States as early as 1931. However, it was advocated even earlier (Dicksee, 1911). The MNM method can be traced back to 1956. The temporal principle is much more recent and has its first clear expression in 1972.

Table C
History of Statements and Studies

	US	*UK*	*Method*
1931	AICPA Bulletin No. 92		CNC
1934	AICPA Bulletin No. 117		CNC
1939	ARB 4		CNC
1953	ARB 43		CNC
1956	S.R. Hepworth		suggests MNM
1960	NAA Research Report No. 36		discusses MNM
1965	APB Opinion 6		MNM
1968		ICAEW, N25	closing or historic rates
1969	APB Statement 3		translate-restate
1970		ICAS, Research Study	closing rate
1972	ARS 12		'temporal'
1972	APB draft Opinion		about losses on long-term liabilities under MNM
1973	FAS 1		about disclosure
1975		ED16	non-committal
1975	FAS 8		'temporal'
1977		ED21	closing rate or 'temporal'
1977	E11		closing rate or 'temporal'
1980		ED27	closing rate (situational)

CNC = current/non-current
MNM = monetary/non-monetary
AICPA = American Institure of Certified Public Accountants
ARB = Accounting Research Bulletin
APB = Accounting Principles Board
ARS = Accounting Research Study
FAS = Financial Accounting Standard
ICAEW = Institute of Chartered Accountants in England and Wales
ICAS = Institute of Chartered Accountants of Scotland
ED = Exposure draft published by the Accounting Standards Committee
E = Exposure draft published by the International Accounting Standards Committee

The early use of the closing rate method

The earliest method of translation was the closing rate method. This evolved in the UK and the US when their currencies and those of other developed trading nations were exchanged at fixed rates, and when the currencies of underdeveloped countries were weaker. Therefore, for most important currencies, the problem of choosing an exchange rate did not arise and, for the others, the closing rate was reassuringly conservative. In addition, the closing rate seems obvious at first sight and is simple to use.

However, in a world where exchange rates fluctuate about their fixed parities or, worse, are freely floating, it has been necessary to address the problem of choosing exchange rates. Some of the arguments for using various methods which involve historic rates are looked at in the following sections. Nevertheless, there are still arguments for the closing rate method; but they have to take account of the different world. These latter arguments are also examined later.

Arguments for and against the CNC and MNM methods

The CNC method was common in the inter-war years (see Table C) when exchanged rates were not continually moving in the same direction but were fluctuating reasonably gently. (See Appendix for exchange rate movements.) The argument supporting the CNC method against the closing rate method was that, with fluctuating currencies, the closing rate at any time was unlikely to be the same as the future rate ruling when non-current liabilities had to be repaid. The consequent practical difference from the closing rate method is that gains or losses on non-current items are not recognised (see Table B). This is justified on the ground that any exchange rate movement is quite likely to reverse (several times) in the following months or years.

The effect of the method is also to link fixed assets with related long-term liabilities. Gains and losses on neither of them are reported, unlike the MNM method, below. However, there has been little backing for the CNC method in recent years, not least because exchange rates no longer fluctuate about fixed parities. Consequently, it is unreasonable to hold that exchange rate movements are likely to reverse. The closing exchange rate is probably the best estimate of the future exchange rate for non-current liabilities (Henning *et al.*, 1978). Further, it is reasonably argued that the definition of current assets and liabilities is a matter of classification, which implies no underlying accounting or economic difference which could be used to determine the appropriate rate of translation (Baxter and Yamey, 1951). These conclusions led to the alternative MNM method as proposed by Hepworth (1956).

As with the CNC method, the MNM method translates non-monetary fixed assets at historic rates and monetary assets at the closing rate. Assets and liabilities are defined as 'monetary' if their amounts are fixed by contract in terms of the currency of the foreign entity. In practice, this tends to include inventories valued at net realisable value (and quoted securities) (Kettel, 1978). This latter exception, which is necessary on the grounds of expediency because of the strange effects of using the historic rate with such assets, suggests that the theory underlying the MNM method is weak. As Lorensen notes (ARS 12, p. 35), inventory cannot be a monetary asset under any reasonable definition, including those used by Hepworth and the National Accounting Association. Inventory is not worth a fixed number of units of the subsidiary's currency.

The difference between the two methods is that MNM exposes long-term liabilities rather than inventories to exchange rate fluctuations. This has been opposed by some, not on theoretical accounting grounds but because of its effect on profits when the parent's currency loses value. In this case, there will be losses shown as a result of long-term liabilities but no gains on fixed assets or inventories. This, it was argued, will be against the real effects of such an exchange rate change, which will actually cause the foreign subsidiary to make larger profits (and dividends) in terms of the parent's currency (Kettel, 1978; APB, 1972; Connor, 1972). However, such a criticism about *future* profits seems hardly relevant under most systems of accounting, let alone historic cost, in the context of which the arguments were made.

It is clear, however, that the practical acceptability of exchange rate methods depended then, as now, mainly on their effects on consolidated profit figures under the economic conditions that happened to be ruling. The above criticisms of the MNM method arose in the US under the novel circumstances of the early 1970s when the dollar was falling against several other currencies (see Appendix). The lack of underlying theory was recognised at this time, and an accounting research study (ARS 12) was commissioned and produced. It was followed by a new financial accounting standard, FAS 8 (FASB, 1975). These documents proposed the temporal principle and incorporated fundamental theoretical reasoning in its favour. Parts of the following discussion can also be used as a justification for the use of historic rates by the MNM method.

Arguments for the temporal principle

ARS 12 and FAS 8 were attempts to provide a logical basis for the choice of rates of exchange for translation, which was not to be restricted to a pure historic cost system of accounting. To start with, at least, economic effects (see later) and the degree to which gains or losses were implied by particular methods were considered less important than a coherent financial accounting theory.

The purpose of consolidation was discussed and concluded to be the presentation of the results of a group as if they were those of a single entity (FAS 8, Appendix D). This leads to the conclusion that the accounting principles of the parent company should be used throughout the group and that the parent's currency should be the single currency used. Under historic cost accounting, the purchase of a foreign subsidiary or the purchase of an asset by a foreign subsidiary should be measured at cost in dollars at the moment of purchase. Each transaction of the foreign subsidiary should have the same effect as if it had been a transaction of the parent. For a US parent, for example, the objective will be to measure and express the assets and liabilities of a foreign subsidiary in dollars and in conformity with US GAAP.

This means that where the parent holds balances at historic cost, for example a machine, then a subsidiary's balances on similar accounts should also be held at historic cost, and translated at historic rates. This will express what it would have cost to buy the asset in the parent's currency on the date of purchase. On the other hand, cash is clearly valued at current value and should therefore be translated at closing rates.

Many balances expressed in money terms imply future amounts of money; for example, debtors, creditors and long-term liabilities. These might be said to require the appropriate *future* rates of exchange. However, fortunately, reality as well as objectivity can be satisfied by using closing rates on the grounds that the present rate of exchange is the best predictor of future rates. This suggestion, that present rates embody expectations, is linked to the efficient market hypothesis (Henning *et al.* 1978). Lorensen in ARS 12 raises other arguments. For example, the loss or gain on exchange is said to belong to the future period when the exchange rate changes, so the closing rate should be used for present balance sheets. This seems a false argument. If the rate change can be predicted, accountants might be expected to provide now for foreseeable losses. If the rate change cannot be predicted, such provision is impossible rather than inappropriate. Further, Lorensen argues that receivables and payables are stated now at current (rather than future) purchasing power. Under historic cost, this surely tells us little about which exchange rate to use. It is the argument at the start of this paragraph which is convincing, and strong enough by itself.

Various details of the application of the temporal principle can be seen to be consistent with the underlying theory. For example, FAS 8 makes it clear (para. 46) that the 'lower of cost and market' rule for inventory valuation should involve a comparison of historic cost at historic exchange rates with net realisable value at closing exchange rates.

Another consistent detail is the choice of the remittance rate when there are multiple rates. In order to explain this it should be noted that it is the proprietary theory which is dominant behind the temporal method. Foreign subsidiaries are seen as existing in order to provide domestic cash flows by remittance (FAS 8, para. 227). Thus, the remittance rate is appropriate for earnings, for assets measured at market values (which could be sold for remittance) and for assets measured at historic cost because this measures the historic sacrifice in remittances in order to incur the cost of the asset. However, Flower (1976, p. 59) suggests that the investment rate would be more logical for the cost of fixed assets.

There are several supporters of the temporal principle, including Lorensen (in ARS 12), Flower (1976) and Hinton (1978). The arguments, that the translation method should not distort the underlying accounting principles so that consolidation can take place on a consistent basis, and that the method should not be expected to correct for the inadequacies of underlying principles in particular accounting systems, seem sound.

Arguments against the temporal principle are contained in the next section.

Arguments for and against the closing rate method

Acknowledging that we do not now live in a world of fixed exchange rates and that we are prepared to use more respectable criteria than simplicity of operation (and, in the UK, familiarity), do there remain any good arguments for the closing rate method?

It is the objectives of consolidation and translation which are crucial here. Suppose that the aim is 'to represent to decision-makers... foreign investments and operations in a familiar currency framework and... to facilitate comparisons' (AAA, 1975). The arguments against the temporal principle and in favour of the closing rate method follow from this. Perhaps such arguments have been more readily accepted in such countries as the UK and Canada, rather than the US, because of greater familiarity with the concept of foreign parents.

The initial plank of the argument is that foreign subsidiaries do *not* exist mainly in order to make remittances to parents. A foreign subsidiary is a separate entity and it is only its net worth which is at risk, not each individual balance. This 'entity' argument is rehearsed in FAS 8 (para. 140 onwards) and seriously advanced by Parkinson (1972) for 'independent' operations as part of a 'situational' approach, and by Patz (1977, 1, pp. 319–321; and 1977, 2).

In this case, it can be argued that all the balances should be translated at the same rate, which should be the rate ruling at the balance sheet date. It can be further argued that, unless this is done, the original relationships between the various balances and profit items will be upset by using more than one rate. Also, there are fewer problems caused by gains or losses on long-term liabilities because there are similar movements on the assets that were financed by them.

It is argued that the economic and commercial environments of foreign subsidiaries may be quite different from that of the parent. Assets were *not* bought by the parent in its currency, and in many cases could not have been bought at the historic prices translated at historic rates. In this sense, assets do not have an historic cost in terms of the parent's currency. Further, the assets were not bought at the expense of remittance, for the money would otherwise have been used for some other foreign purpose.

At this point, the supporters of the temporal method might reply that if the foreign subsidiary is 'independent' and not for remittances, it should not be consolidated but treated by the *equity* method. In those cases where a subsidiary is centrally controlled and should be consolidated, the temporal arguments about consistency of principles should apply.

It seems clear that there is no precise consensus about the purpose of consolidation. Are consolidated statements intended to amplify parent company statements, to be a more realistic form of parent company statements, to represent the group as if it were a single entity, or to perform some other purpose? The genesis of consolidation and the influence of these competing purposes is very well described by Walker (1978). He points out that it is not at all obvious that full consolidation is the correct approach for subsidiaries, let alone for partially owned foreign subsidiaries. This vagueness of purpose contributes to the confusion of the translation debate.

Returning to the arguments of supporters of the temporal method, they would further hold that a foreign subsidiary's historic cost balances which are translated at closing rates become a meaningless combination which is neither historic cost nor a valuation. The closing rate for historic cost accounting is said to lead to 'conceptual and practical nonsense' (Hinton, 1978). It leads to 'nothing except the product of multiplying two unrelated numbers' (Storey, 1972).

If these dismissals of the theoretical arguments for the closing rate are accepted, there is still further 'economic' argument to hear. For example, Seidler (1972) supports the closing rate method on the basis that, unlike the temporal or MNM methods, it moves profit in the same direction as future earnings streams in the parent's currency. Smith (1978) argues that same point, that subsidiaries in a country with a strong currency show a loss under the temporal method because of long-term liabilities, but actually represent a good investment. However, these are imprecise arguments based on what happens to be expedient under temporary conditions. They are partly criticisms of the underlying historic cost accounting. As Flower (1976, p. 28) says: 'If... the historic rate method... produces unacceptable translated accounts, then the deficiency may well rest with the historic cost based accounts... The underlying problem will not be solved by changing the method of translation to the closing rate method, which... is not theoretically consistent with... accounts based on historic cost'.

It has been noted that the clamour against the temporal method seems to have much to do with the effects on the income statement. A survey has found that 80 per cent of US multinationals were already taking exchange differences to income *before* FAS 8 was introduced (Evans and Folks, 1979). The strength of opposition seems to be related to the fact that, because of the weakness of the dollar, the practice imposed by FAS 8 is now inexpedient.

Recent developments in standard practice

There is currently (June, 1980) no standard practice in the UK. Exposure Draft 21 was much criticised for allowing either closing rates or the temporal principle. The latter was allowed because some UK companies file their financial statements with the SEC, and hence must obey FAS 8 at least for that version of their statements. However, during 1977/78, 94 per cent of the top 300 companies used the closing rate method (ICAEW, 1979, p. 53). The new exposure draft of October 1980 makes its preference for the closing rate method more obvious but allows use of the temporal method under certain circumstances.

In the US, FAS 8 has come under heavy criticism, particularly from practical men rather than from academics. In March 1980 the FASB concluded that the closing rate method had a number of advantages, and announced an intention to prepare a new exposure draft on that basis (issued August 1980).

In Canada, there has been similar uncertainty about the existing proposals for the introduction of the temporal method. However, in Australia, an exposure draft based on the temporal method was issued during 1979. Not surprisingly, the exposure draft of the IASC proposes to allow both the temporal and the closing rate methods. However, it would be unrealistic to expect a standard until the FASB has resolved its difficulties.

Inflation and specific price changes

A somewhat analogous problem to the choice of rates of exchange for foreign currency translation is the choice of 'rates of exchange' for translation of units of a domestic currency over time. Historic cost accounting is a sort of MNM method, and current purchasing power (CPP) accounting might be compared to the closing rate method. Current value accounting, however, is not directly analogous, because it is not the 'rate of exchange' between pounds of different dates which is being adjusted for.

Naturally, when dealing with the financial statements of foreign subsidiaries in periods of changing prices, the above problem is combined (and sometimes confused) with the problem of translation. Many writers on CPP in this context have recommended restatement of the subsidiary's financial statements to CPP using a foreign index, followed by translation at the closing rate of exchange (Zwick and Zenoff, 1969; Parkinson, 1972; Shwayder, 1972; Choi, 1975; AAA, 1975). The restate-translate method is better for resource allocation and performance comparison, it is argued.

However, the sounder arguments from a financial accounting theory point of view appear to be on the other side, and thus for translate-restate (CPP) using a parent country index. (Rosenfield, 1971; Lorensen and Rosenfield, 1974; APB, 1965; Flower, 1976, p. 51). It is argued that restate-translate is wrong because it leads to foreign balances which have been adjusted for foreign inflation being added to domestic balances adjusted for domestic inflation. Since CPP is a historic-cost based system, historic rates should be used to translate the foreign balances. This should be followed by restatement to CPP for consolidation using the price indices of the parent country. Thus, balances which are all expressed in historic units of the domestic currency will all be adjusted for domestic inflation before being added together. Consistency of accounting principles will have been achieved. However, Patz (1977, 1, p. 317) rightly notes that translate-restate is only obviously theoretically correct once a proprietary assumption has been made.

There are criticisms of the *usefulness* of the answers given by translate-restate (CPP). These have not only been made by those who support restate-translate. Perhaps a greater consensus exists when dealing with current value (CV) accounting. There is general support for restate (CV)-translate. (Goudeket, 1960; Parker, 1970; Flower, 1976; IASG, 1976). Here the foreign subsidiary restates its financial statements using some form of current value accounting (perhaps CCA). This is followed by translation using closing rates of exchange. This approach seems less vulnerable to attacks on theoretical or practical grounds.

Purchasing power parities

An alternative approach for dealing simultaneously with translation and inflation uses purchasing power parities (PPPs). The purchasing power parity theory has been developed by economists studying the moments of exchange rates (e.g. Balassa, 1964). It has been adapted by accountants as an alternative to exchange rates, initially particularly for measuring foreign exchange exposure (NAA, 1960; AAA, 1974; Aliber and Stickney, 1975; Patz, 1977, 1, p. 321 ; Patz, 1977, 2). Supporters of PPPs concede that translate-restate (CPP) might be satisfactory if exchange rate movements and relative price level movements cancelled out. However, it is clear that exchange rates are not only affected by relative inflation rates but also by political factors, interest rates, balances of payments, and so on. Considerable stress is placed upon the suggestion that this renders exchange rates 'inaccurate' and unsuitable for translation, for which they were not designed. Some writings are just assertions, which offer no reasoned argument about why it matters what determines exchange rates (AAA, 1974). This question needs to be answered, for we do not reject an historic cost or a current value on the basis of which particular elements of supply or demand have determined a price. It is possible to guess that the above assertions are based on the assumptions of Scott (1975) who sat on the appropriate AAA Committee. If so, the reasoning is based on the idea that the objective of translation is to enable a better prediction of the future. This has already been criticised, particularly in the context of historic cost. Many of Scott's arguments in favour of PPPs and against exchange rates are answered by Clarke (1977), who thinks that neither may be appropriate for many balances.

Fortunately, some arguments in favour of PPPs are more clearly stated. Patz (1977, 1) makes it clear that under proprietary theory of the sort which leads to the temporal method, exchange rates seem sensible. He claims, however, that an entity approach is more suitable and that, in order to preserve the original local meaning of foreign financial statements, PPPs are more appropriate than exchange rates. It is also argued that foreign balances awaiting translation have a 'place significance' which is somewhat similar to the 'time significance' of balances being adjusted for inflation (Patz, 1977, 2, p. 19). The coefficients necessary for translation are based upon ratios of the general purchasing power of the currencies involved. Exchange rates could be used if it can be proved that they approximate to such PPPs. This entity-based theory suggests that a UK parent should be interested in its worldwide command over goods and services not over pounds sterling.

The response to this is that a UK holding company's shareholders *are* interested in command over pounds sterling, and that the local subsidiary's financial statements still remain for other uses (Flower, 1978). However, this does not seem to fit with the idea that consolidation presents the accounts of the *group* rather than amplifying the holding company accounts. As for the 'place significance', Clarke (1978) suggests that domestic goods and foreign goods are just as heterogeneous as domestic money and foreign money, because of transportation costs and other reasons Therefore, adjusting by PPPs does not provide balances which may sensibly be summed.

There is, no doubt, considerable mileage left in the PPP debate. However, it seems unlikely that Table C will need to be updated on this account in the near future.

Economic effects

It has been noted several times in this paper that some writers have argued for or against particular translation methods at particular times on grounds of the economic effects of resulting profit and asset figures. The late 1970s has seen the development of a considerable literature (mainly American) on the subject of economic and political effects of accounting standards. One of the areas which is often used as an example is currency translation.

Many have argued that accounting standards have considerable effects on profit and asset figures and that, therefore, they have economic effects (Rappaport, 1977; Wyatt, 1977; Solomons, 1978). Zeff (1978, pp. 57–59) has charted the influence of 'economic consequences' on accounting pronouncements in the US since 1941. He says that 'on each of the occasions..., outside parties intervened... by an appeal to criteria that transcended the traditional questions of accounting measurement and fair presentation'.

The arguments have gone even further, to suggest that accounting rules should be set democratically by politically responsive institutions (Gerboth, 1973; Horngren, 1973; May and Sundem, 1976). There is clearly considerable pressure for such 'democratic' involvement by interested parties. Such pressures hastened the demise of the APB (Zeff, 1978, p. 60). Consequently, the FASB is less dependent on the accounting profession, and has added 'probable economic or social impact' to its conceptual framework (FASB, 1976).

In the case of currency translation, it has been shown that some methods have been criticised because they can cause profits to be smaller or more volatile (Scott, 1975, p. 61; Smith, 1978). The arguments are often not concerned with whether or not this is a better presentation but with any effects on the decision-making of multinationals. However, the arguments against allowing accounting rules to be influenced by political pressures based on probable economic consequences seem very strong. Solomons (1978, p. 69) notes that 'critics of the FASB are asserting that economic behaviour, such as... hedging, which would not have been rational under the old accounting rules becomes rational under the new ones. Such an assertion is difficult to defend because the new rules have not changed the underlying cash flows or risks.... Only if significance is attached exclusively to *the bottom line*, rather than to the present value of the enterprise, can the change in behaviour be defended'. Solomons goes on to give several examples where manipulating a measuring device soon gives rise to loss of neutrality, loss of reliability and, then, loss of usefulness. Zeff (1978, p. 63) agrees that 'the FASB would surely preside over its own demise if it were to...make decisions primarily on other than accounting grounds'.

It should not be regretted that different accounting gives rise to different economic decisions. Perhaps some of the decisions made by Rolls Royce and its shareholders in the late 1960s would have been different if SSAP 13 on R & D expenditure had been in operation. To claim that such a standard inhibits R & D expenditure would not prove that the standard should be changed.

Summary

The purpose of this article is to try to clarify the differences in translation methods, and their causes. Some differences are due to different underlying assumptions; others appear to be due to a lack of *consistent* assumptions. The debate has been confused by the use of erroneous definitions and faulty argument. Many translation methods have been advanced in theoretical writings and several have been recommended by professional bodies and used in practice in the UK and the US. A chronology of the development of these methods is provided.

The current/non-current and the monetary/non-monetary methods were attempts to provide a method which was thought to be more suitable than the closing rate method in a world of fluctuating exchange rates. However, the former has attracted particularly heavy criticism on theoretical grounds. The desire to have a consistent underlying financial accounting theory, which would cope with both historic cost accounting and other systems, led to ARS 12 and FAS 8 which introduced the temporal principle. This seems acceptable to many financial accounting theorists on both sides of the Atlantic. However, some practitioners, specialists in business finance and management accountants are opposed to it because of its effects on profits. Also, alternative accounting assumptions to the proprietary method (on which ARS 12 was based) can be used to favour the closing rate method.

In practice, it might appear that the translation method used in a particular country at a particular time depends little on theories but more on its effects on profits under the ruling exchange rate conditions.

The underlying assumptions about the purpose of financial statements, consolidation and translation affect the way in which adjustments for inflation and specific price changes are linked with a translation method. For CPP, translate-restate seems to fit with the proprietary assumption and the temporal principle. The weight of theoretical arguments appear to be on this side. For CCA, restate-translate is fairly clearly correct.

There is, however, a more fundamental suggestion that exchange rates are not suitable for translation. Some writers propose purchasing power parities, but these have failed to gain general acceptance. There are, also, arguments that suggest that neither exchange rates nor PPPs are suitable for most balances and that, since the proprietary theory is questionable for many multinationals, consolidation is not suitable either.

More recently, the intensity of the debate on the economic consequences of accounting rules about such matters as translation has increased. However, the arguments in favour of 'integrity' and 'neutrality' for accounting standards seem to be the stronger, even if expediency and short-term political matters are beginning to affect more seriously the setting of standards in practice.

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Appendix

Selected exchange rates

	US $ to £1	*French francs to £1*	*French francs to $1*	*German marks to £1*	*German marks to $1*	*Brazil cruzeiro to £1*	*Brazil cruzeiro to $1*
1870		25.1	4.98				
Pre-war	4.867	25.22	5.18	20.429	4.198	15	3.080
1914		25.3	5.19				
1915	4.86	25.12	5.24		4.59	17.75	3.17
1916	4.77	28	5.90		5.36	20	4.04
1917	4.76	27.8	5.86		5.53	20	4.27
1918	4.76	27.18	5.72			17.75	3.72
1919	4.76	26	5.47			18.5	3.92
1920	3.7	41	11	340	100.5	13.75	3.72
1921	3.8	54	14	215	57	25.25	6.78
1922	4.2	51.4	12.15	790	186	32	7.87
1923	4.65	62	14	32,000	6890	40	8.60
1924	4.25	84	20	*19 billion*	*4.47 billion*	40	9.41
1925	4.74	88	18.57	20	4.22	40	8.44
1926	4.85	129.25	26.59	20.3	4.18	34.25	6.64

1927	4.85	122	25.10	20.4	4.2	41.75	8.6
1928	4.87	124	25.52	20.45	4.21	40	8.23
1929	4.85	124	25.52	20.4	4.20	40	8.36
1930	4.87	123.9	25.50	20.4	4.20	43.5	8.95
1931	4.87	123.67	25.43	20.4	4.20	53.3	10.97
1932	3.38	86	25.59	14.25	4.24	60	17.86
1933	3.34	86	25.59	14.10	4.2	43.5	12.95
1934	5.0	83	16.6	13.6	2.61	60	16
1935	4.93	74.5	15.31	12.1	2.45	84.9	17.22
1936	4.93	75	15.31	12.25	2.48	86.3	17.33
1937	4.91	105	21.43	12.25	2.48	79.6	16.08
1938	5.0	147	29.4	12.4	2.49	83.5	18.17
1939	4.63	176.5	39.8	11.5	2.49	81.9	19.71
1940	4.03	176.5	43.8		2.5	73.7	19.79
1941	4.03						
1942	4.03					83.6	19.64
1943	4.03					83.6	19.63
1944	4.03					83.6	19.57
1945	4.03	203	49.72			82.8	19.50
1946	4.03	480	119.3			79	18.72
1947	4.03	480	119.3			79	18.72
1948	4.03	864	214.7	13.4	3.33	79	18.72
1949	4.03	1093	350	13.4	3.33	52	18.72
1950	2.80	980	350	11.76	4.2		
1951	2.80	979	349.95	11.76	4.2		
1952	2.79	981	349.95	11.5	4.2		
1953	2.81	982	349.95	11.70	4.2		
1954	2.81	981	349.95	11.73	4.2		
1955	2.79	978	349.95	11.74	4.2		
1956	2.80	982	350	11.71	4.2		
1957	2.79	984	350	11.73	4.2		
1958	2.81	1117	420	11.72	4.2		
1959	2.81	1374	490	11.74	4.18		
1960	2.81	13.74	4.90	11.71	4.17		
1961	2.81	13.7	4.9	11.17	3.99		
1962	2.81	13.7	4.9	11.20	3.99		
1963	2.80	13.7	4.9	11.11	3.97		
1964	2.79	13.7	4.9	11.09	3.97	4400	1610
1965	2.80	13.7	4.9	11.22	4.0	6216	2220
1966	2.79	13.8	4.9	11.09	3.97	6216	2220
1967	2.79	13.8	4.9	11.22	4.01	6130	2200
1968	2.4	11.8	4.9	9.5	3.98	7.6	3.2
1969	2.4	11.8	4.9	9.58	4.01	9.0	3.5
1970	2.4	13.2		8.7		10.4	
1971	2.42	13.3		8.7		11.9	
1972	2.6	13.3		8.3		14.4	
1973	2.4	12.0		7.5		14.6	
1974	2.3	11.2		6.0		14.2	
1975	2.2	9.5		5.4		17.0	
1976	1.8	8.6		4.6		18.3	
1977	1.7	8.5		4.0		21.0	
1978	1.9	9.1		4.1		30.6	
1979	2.0	8.5		3.7		42.5	

Sources: R. L. Bidwell, *Currency Tables*, Rex Collings, London, 1970; CSO, *Financial Statistics* February 1973 and December 1979, HMSO, London, Table 102.

When several rates are quoted in the sources, the rate noted above is the earliest given for the particular year.

Investment and Risk: The Effect of Capital Allowances

John Pointon

1. Introduction

It is interesting to examine whether there is a loss of economic efficiency under the imposition of taxation. Indeed, one of the desirable requirements of a fiscal structure is that 'excess burden' is minimised,[1] the existence of 'excess burden' being shown whenever economic decisions under a tax system differ from those that would have been made had the tax not been introduced. It has been argued elsewhere[2] that, ignoring risk and financial planning constraints, a cash flow tax system with constant tax time lags, proportional tax rates, full relief for losses and 100 per cent capital allowances, offers a neutral solution. However, an analysis of the tax effects on corporate returns is incomplete without a study of risk, since risk and returns are interrelated. It is to this question of risk that we now turn.

2. A neutral tax system within the framework of the capital asset pricing model

We shall conduct an analysis of the risk-return relationship for a particular firm within the framework of the capital asset pricing model (CAPM). The assumptions of the model may be summarised as follows:

1. all investors are single-period expected utility of terminal wealth maximisers who choose among alternative portfolios on the basis of mean and variance (or standard deviation) of returns;
2. all investors can borrow or lend an unlimited amount at an exogenously given risk-free rate of interest, R_F, and there are no restrictions on short sales of any asset;
3. all investors have identical subjective estimates of the means, variances and covariance of return among all assets, that is, investors have homogeneous expectations;
4. all assets are perfectly divisible, perfectly liquid (that is, marketable at the going price), and there are no transactions costs;
5. there are no taxes;
6. all investors are price-takers;
7. the quantities of all assets are given.[3]

Instead of assumption (5) we shall treat any tax imperfections on the risk-return relationship with respect to the 'efficient market' to have been determined prior to the study of the effects of alternative treatments of tax for the particular firm in question. Although this may at first seem a little strange, it is certainly true that with the peculiarities of the present tax system different firms do have different tax profiles. This is reflected, for instance, in different balances of capital allowances brought forward and different reliefs for capital expenditure according to the type of asset.

Under the model, the minimum required mean rate of return for a given level of risk, where risk is priced according to the covariability of a project with the efficient market, is

$$\bar{r}_j = R_F + (\bar{k}_M - R_F)\beta_j \qquad (1)$$

where

R_F = the risk-free interest rate
$\bar{k}_M$ = the mean rate of return on the 'efficient market'
$\beta_j = \text{cov}(k_j, k_M)/\text{var}(k_M)$
$\text{cov}(k_j, k_M)$ = covariance of the rates of return of project j with the rates of return on the 'efficient market'
$\text{var}(k_M)$ = variance of the rates of return on the 'efficient market' portfolio

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[1] Musgrave, R. A., and Musgrave, P. B., *Public Finance in Theory and Practice*, McGraw-Hill, 1976, p. 462.

[2] Pointon, J., 'Towards a Corporate Cash Flow Tax System', *Accountancy*, July 1978.

[3] This is a quotation from Weston, J. F., and Brigham, E. F., *Managerial Finance*, Holt, Rinehart and Winston, 1978, pp. 431–432; see also, Jensen, M. C., 'Capital Markets: Theory and Evidence', *Bell Journal of Economics and Management Science*, 3, Autumn, 1972.

Table 1

	Possible outcomes			
	A	*B*	*C*	*All outcomes*
Probability of outcome	0·20	0·60	0·20	1·00
Yield on the 'efficient' market	0·05	0·06	0·12	—
Expected, or average, market yield	0·010	0·036	0·024	0·070
Deviation of yield on 'efficient' market from average market yield for all outcomes	−0·02	−0·01	+0·05	—
Project returns, £ per annum	80,000	90,000	100,000	—
Rate of return on investment outlay J	$\frac{80{,}000}{J}$	$\frac{90{,}000}{J}$	$\frac{100{,}000}{J}$	—
Expected, or average, rate of return (using probabilities given)	$\frac{16{,}000}{J}$	$\frac{54{,}000}{J}$	$\frac{20{,}000}{J}$	$\frac{90{,}000}{J}$
Deviation of project rate of return from average for all outcomes	$-\frac{10{,}000}{J}$	0	$+\frac{10{,}000}{J}$	—
Market deviation	−0·02	−0·01	+0·05	—
Covariance of rate of return on the project with that of the market	$\frac{40}{J}$	0	$\frac{100}{J}$	$\frac{140}{J}$

$\bar{r}_j$ = the minimum required mean rate of return on an individual project j[4]

A simplified illustration of the model is shown in Table 1. Although the initial example is partly numerical, the same results obtain if we adopt a general algebraic analysis.

The mean rate of return in a tax-free situation is

$$\bar{k} = \frac{90{,}000}{J} \tag{2}$$

and the beta coefficient in a tax-free situation is

$$\beta = \frac{1}{\mathrm{var}(k_M)} \times \frac{140}{J} \tag{3}$$

Let us now consider the effects of tax relief on the capital expenditure at the rate of α where $\alpha = 1$ for a 100% capital allowance. With proportional tax rates under a cash flow tax system, we can calculate the mean rate of return after tax and a new beta coefficient (see Table 2).

We now observe that the mean rate of return under our special tax system will be

$$\bar{k}_{T\alpha} = \frac{90{,}000(1 - T^*)}{J(1 - \alpha T^*)} \tag{4}$$

and the beta coefficient will be

$$\beta_{T\alpha} = \frac{1}{\mathrm{var}(k_M)} \times \frac{140(1 - T^*)}{J(1 - \alpha T^*)} \tag{5}$$

giving

$$\bar{k}_{T\alpha} = \frac{\bar{k}(1 - T^*)}{(1 - \alpha T^*)} \tag{6}$$

and

$$\beta_{T\alpha} = \frac{\beta(1 - T^*)}{(1 - \alpha T^*)} \tag{7}$$

Substituting for $\alpha = 1$ in equations (6) and (7) we derive

$$\bar{k}_{T1} - \bar{k} \tag{8}$$

and

$$\beta_{T1} = \beta \tag{9}$$

Hence although the tax system under consideration reduces returns by the amount of the tax bill, it does not alter the *rates* of return if 100% capital allowances are given. Moreover, since rates of return are unaltered, deviations of those rates of return and covariance are also unaltered. Even if the returns had been negative in each 'state of nature', the returns after tax would have been reduced to $(1 - T^*)$ times the loss, assuming perfect loss relief, with the same general results. Therefore, given the assumptions behind the CAPM, a cash flow tax system, with the charac-

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[4] Weston, J. F., and Brigham, E. F., *Managerial Finance*, Holt, Rinehart and Winston, 1978.

Table 2

	Possible outcomes			
	A	*B*	*C*	*All*
Project returns after tax, £ per annum	$80{,}000(1 - T^*)$	$90{,}000(1 - T^*)$	$100{,}000(1 - T^*)$	—
Project rate of return on net investment of $J(1 - \alpha T^*)$	$\frac{80{,}000(1 - T^*)}{J(1 - \alpha T^*)}$	$\frac{90{,}000(1 - T^*)}{J(1 - \alpha T^*)}$	$\frac{100{,}000(1 - T^*)}{J(1 - \alpha T^*)}$	—
Deviation of project rate of return, for a given outcome, from the average for all outcomes	$\frac{-10{,}000(1 - T^*)}{J(1 - \alpha T^*)}$	0	$\frac{+10{,}000(1 - T^*)}{J(1 - \alpha T^*)}$	—
Covariance of rate of return on project with that of the market	$\frac{40(1 - T^*)}{J(1 - \alpha T^*)}$	0	$\frac{100(1 - T^*)}{J(1 - \alpha T^*)}$	$\frac{140(1 - T^*)}{J(1 - \alpha T^*)}$

Note: T^* = the marginal corporate tax rate discounted by the time value of money to allow for the time lag between the end of each accounting period and the tax payment date.

teristics of constant tax rates, constant tax time lags, perfect loss relief and free depreciation, offers neither incentives nor disincentives to risk-taking.

3. The risk disincentive with 'imperfect' tax relief

Let us now examine possible imperfections in the tax system. Consider an extreme case where there is no relief for capital allowances. With $\alpha = 0$, we have

$$\bar{k}_{T0} = \bar{k}(1 - T^*) \tag{10}$$

and

$$\beta_{T0} = \beta(1 - T^*) \tag{11}$$

from equations (6) and (7).

The minimum required mean rate of return for the new level of risk, denoted β_{T0}, is shown in the diagram of Figure 1. Point A represents a project whose mean rate of return in a tax free situation, denoted $\bar{k}$, is equated with the minimum required mean rate of return, denoted $\bar{r}$, for a given level of risk, β. With taxes on inflows but no relief on capital expenditure we have a new level of risk, denoted $\beta(1 - T^*)$, which determines a new minimum required mean rate of return of $\bar{r}_{T0}$. The reduction in the required rate of return is given by

$$AC = \tan\phi[\beta - \beta(1 - T^*)] \tag{12}$$

From equation (1)

$$\tan\phi = (\bar{k}_M - R_F) \tag{13}$$

therefore

$$AC = T^*\beta(\bar{k}_M - R_F) \tag{14}$$

Now, although full tax relief for capital expenditure would leave the *rate* of return unchanged, since we are considering the absence of capital allowances, the introduction of taxes on inflows decreases the mean rate of return by an expected tax bill at the rate of $(T^*\bar{k})$. Since we are considering a marginal case in the tax-free situation then

$$T^*\bar{k} = T^*\bar{r} \tag{15}$$

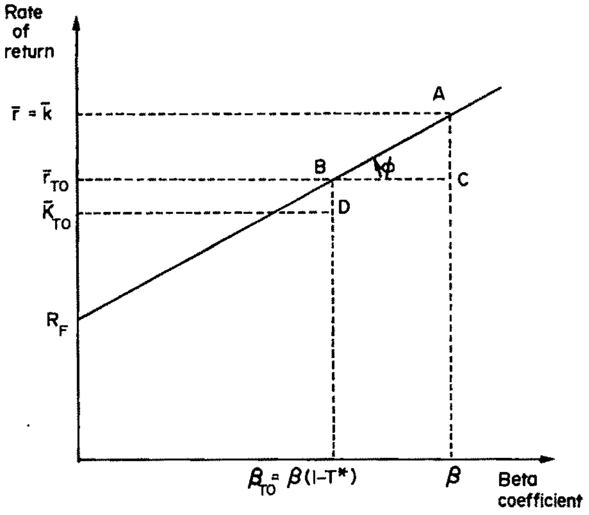
By substitution in equation (1)

$$T^*\bar{k} = T^*R_F + T^*(\bar{k}_M - R_F)\beta \tag{16}$$

By comparing equations (14) and (16) we note that $T^*\bar{k}$ exceeds AC by the term T^*R_F. Hence the expected rate of return, after taxes on inflows but without relief for capital expenditure, is represented by point D in Figure 1, which lies below the line of the minimum required mean rate of return for a given level of risk. Since the expected rate of return is reduced through taxation by more than the required mean rate of return for the new level of risk, there is an economic inefficiency or 'excess burden', indicating that the marginal project before tax becomes unattractive after tax.

Effectively, we have considered the following situation. Two firms are about to invest in a similar risky project. The pre-tax returns and their interactions with existing projects are assumed to be identical regardless of which firm proceeds with the investment. Firm X is in a tax-free situ-

Figure 1
The risk disincentive with taxes on inflows but no capital allowance



ation, although Firm Y pays tax but does not receive any tax reliefs on the capital expenditure. Hence if the project is marginal for Firm X, it will be unacceptable to Firm Y and if it is marginal for Firm Y it will be acceptable to Firm X. Let us now measure the extent by which Firm X's project is financially attractive in Firm Y's marginal case.

The minimum required mean rate of return after tax is

$$\bar{r}_{TO} = R_F + (\bar{k}_M - R_F)\beta(1 - T^*) \tag{17}$$

being derived directly from Figure 1 and equation (1).

Note that we are now considering an investment which is marginal after tax, and not before tax. Hence

$$\bar{k}_{TO} = \bar{r}_{TO} \tag{18}$$

where

$\bar{k}_{TO}$ = the expected rate of return after taxes on inflows but with no relief for capital expenditure.

By substitution in equation (17) we have

$$\bar{k}_{TO} = R_F + (\bar{k}_M - R_F)\beta(1 - T^*) \tag{19}$$

From equation (10) we can substitute $\bar{k}(1 - T^*)$ for $\bar{k}_{TO}$, where $\bar{k}$ represents the expected rate of return in a tax-free situation, giving

$$\bar{k} = \frac{R_F}{1 - T^*} + (\bar{k}_M - R_F)\beta \tag{20}$$

However, from equation (1) and from Figure 1 we have by definition

$$\bar{r} = R_F + (\bar{k}_M - R_F)\beta \tag{21}$$

where

$\bar{r}$ = the minimum required mean rate of return in a non-taxpaying situation.

Hence from equations (20) and (21), the extent by which the expected before tax rate of return, in a tax-paying situation but with no relief for capital expenditure, must exceed the minimum required rate of return in a non-tax-paying situation is

$$\bar{k} - \bar{r} = R_F\left(\frac{1}{1 - T^*} - 1\right) \tag{22}$$

giving

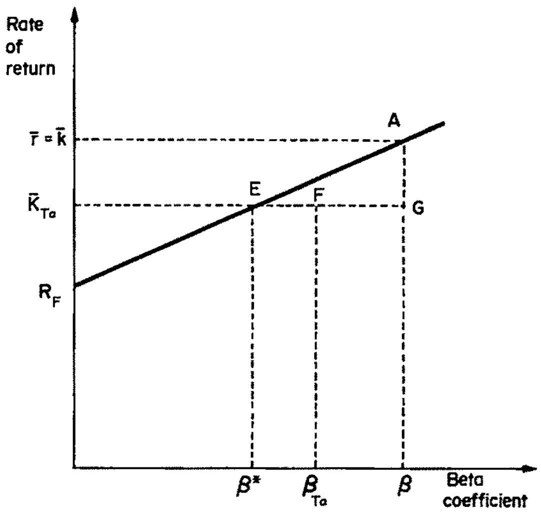
$$\bar{k} - \bar{r} = R_F\left(\frac{T^*}{1 - T^*}\right) \tag{23}$$

When

$$T^* = 50\%,$$
$$\bar{k} - \bar{r} = R_F$$

Therefore if the risk-free rate is, say, 6%, then a firm paying taxes on inflows, but receiving no relief for capital expenditure, needs to find projects with a before tax rate of return of at least 6% more than the required mean rate of return in a non-taxpaying situation. If the effective marginal tax rate is more than 50%, a 'tax premium' of

Figure 2
The risk disincentive with taxes on inflows but partial capital allowances



more than 6% is required. If the effective marginal tax rate is less than 50%, a 'tax premium' of less than 6% is required. The 'tax premium' is particularly significant where stock relief is claimed and Advance Corporation Tax setoff is not restricted. For instance, if net taxable income is more than £85,000 and a claim for stock relief is made throughout the life of the project, then the marginal corporate tax rate is 59.8%.[2] Ignoring the tax time lag, which will create a slightly reduced effective rate, the tax premium is given by

$$R_F\left(\frac{T^*}{1-T^*}\right)=0.06\left(\frac{0.598}{1-0.598}\right)=0.089.$$

Consider a risky project with a required rate of return of 12% if no tax were payable and an expected return of 18% before tax. The effect of a tax-paying situation, but with no capital allowances, is to raise the before-tax required mean rate of return to 12% plus 8.9%, giving 20.9%. Firms paying taxes on inflows but receiving no relief for capital allowances will not be able to undertake such a risky project since the 18% expected rate of return is inadequate; yet a firm not paying tax will find the project attractive since the expected yield will be 6% above the required threshold.

Let us now consider the more general case of $\alpha \neq 0$. From equation (1)

$$\beta_j=\frac{\bar{r}_j-R_F}{\bar{k}_M-R_F} \qquad (24)$$

Let

$$\bar{r}_j=\left(\frac{1-T^*}{1-\alpha T^*}\right)\bar{r} \qquad (25)$$

Therefore

$$\beta_j=\frac{1}{\bar{k}_M-R_F}\left[\frac{(1-T^*)\bar{r}}{1-\alpha T^*}-R_F\right] \qquad (26)$$

Multiplying by

$$\left(\frac{1-T^*}{1-\alpha T^*}\right)$$

throughout in equation (21) we obtain

$$\frac{(1-T^*)\bar{r}}{1-\alpha T^*}=\frac{(1-T^*)R_F}{1-\alpha T^*}+\frac{(1-T^*)}{(1-\alpha T^*)}(\bar{k}_M-R_F)\beta \qquad (27)$$

From equations (26) and (27)

$$\beta_j=\frac{1}{\bar{k}_M-R_F}\left[\frac{(1-T^*)R_F}{1-\alpha T^*}+\frac{(1-T^*)(\bar{k}_M-R_F)\beta}{1-\alpha T^*}-R_F\right] \qquad (28)$$

giving

$$\beta_j=\frac{(1-T^*)}{(1-\alpha T^*)}\beta-\frac{R_F}{\bar{k}_M-R_F}\left[1-\frac{(1-T^*)}{(1-\alpha T^*)}\right] \qquad (29)$$

Since

$$\bar{k}_M > R_F > 0,$$

and

$$0 < \frac{1 - T^*}{1 - \alpha T^*} < 1,$$

then the second term on the right-hand side of equation (29) is negative. Therefore

$$\beta_j < \frac{(1 - T^*)}{(1 - \alpha T^*)} \beta \tag{30}$$

However, given a marginal investment before tax, the mean rate of return before tax is equated with the minimum required mean rate of return for a given level of risk, denoted β. Therefore

$$\bar{k} = \bar{r} \tag{31}$$

and from equation (6)

$$\bar{k}_{T\alpha} = \frac{(1 - T^*)}{(1 - \alpha T^*)} \bar{r} \tag{32}$$

and the new level of risk is given by equation (7) reproduced below

$$\beta_{T\alpha} = \frac{(1 - T^*)}{(1 - \alpha T^*)} \beta \tag{33}$$

If we compare equations (25) with (32), and (30) with (33), we find that when

$$\bar{r}_j = \bar{k}_{T\alpha}$$

then

$$\beta_j < \beta_{T\alpha}$$

The relationship is shown in Figure 2 where

$$\beta^* = \beta_j$$

for

$$\bar{r}_j = \bar{k}_{T\alpha}$$

Point A of Figure 2 corresponds with point A of Figure 1. When $\alpha = 0$, symbolising no capital allowance, point D of Figure 1 is represented by point F in Figure 2. The greater the rate of capital allowance the closer $\bar{k}_{T\alpha}$ moves up the vertical axis towards $\bar{k}$, and the smaller the discrepancy between β^* and $\beta_{T\alpha}$. The effect of taxation on a project which is marginal before tax is to reduce the expected mean rate of return from $\bar{k}$ to $\bar{k}_{T\alpha}$. At this lower rate of return the maximum degree of risk acceptable is reduced from β to β^*. However, the actual level of risk after tax, denoted $\beta_{T\alpha}$, exceeds the permitted level of β^* with the consequence that taxation imperfections make financially unattractive a project which was marginal before tax. Referring back to the introductory comments, we experience an 'excess burden'.

4. A classification of 'imperfect' relief by type of expenditure

In Table 3 we derive the values of α for different types of expenditure. Note that time lags between (i) the end of each accounting period and the annual tax payment date and (ii) the time of the expenditure and the date of the accounting year-end have been ignored, since (i) is accommodated by T^*, a marginal tax rate discounted for the type (i) lag, and (ii) affects taxes on inflows in the same way as tax relief on outflows assuming that inflows and outflows occur at the same time within each accounting year. For plant and machinery and scientific research, $\alpha = 1$, reflecting 100% capital allowances in the year of expenditure as the maximum relief. New industrial buildings receive a 50% allowance in the year of expenditure together with a 4% allowance annually, including one in the first year, until the asset is written off. Hence, the final 2% is written off in the thirteenth year. Expenditure on second-hand industrial buildings is written off over the remaining tax life of the asset. Buildings initially acquired before 6 November 1962 are deemed to have a useful life of 50 years for tax purposes and those initially acquired after 6 November 1962 are deemed to have a life of 25 years. Where a building was built in, say, October 1962 and acquired by another firm in October 1978, then 34 of the 50 years of tax write-offs are still remaining. Where the second-hand purchase price does not exceed the cost to the initial owner, the second-hand price is written off over the remaining life of the asset. However, where the second-hand price exceeds the cost to the initial owner, only the original cost may be written off. This is reflected in a much lower value of α. Agricultural buildings and works are written off over 10 years, new patents over 17 years and others over the remaining life of the patent, and know-how is written off over 6 years.

Under the Capital Allowances Act of 1968 the ineligibility of capital expenditure for tax allowances is applicable to buildings which are either not of 'qualifying' type or not of a 'qualifying' trade. Normally there are no capital allowances for investments in buildings not in the manufacturing industry. In these cases $\alpha = 0$, indicating a strong tax disincentive to invest. From Table 3 we see that the partial capital allowances represented

Table 3
The present value of capital allowances as a proportion of cost

	Values of α	
Type of expenditure	$k = 10\%$	$k = 20\%$
Plant and machinery[1]	1.00	1.00
Scientific research	1.00	1.00
New industrial building[2]	0.81	0.72
Second-hand industrial building first acquired in October 1962:		
(a) where the second-hand purchase price in October 1978 does not exceed the cost to the initial owner[3]	0.32	0.26
(b) where the second-hand purchase price in October 1978 is twice the cost to the initial owner[4]	0.16	0.14
(c) where the second-hand purchase price in October 1978 is four times the cost to the initial owner[5]	0.08	0.07
Second-hand industrial building first acquired in December 1962:		
(a) where the second-hand purchase price in December 1978 does not exceed the cost to the initial owner[6]	0.70	0.54
(b) where the second-hand purchase price in December 1978 is twice the cost to the initial owner[7]	0.35	0.27
(c) where the second-hand price in December 1978 is four times the cost to the initial owner[8]	0.17	0.13
Agricultural buildings and works[9]	0.68	0.50
Patents:		
(a) new patents[10]	0.53	0.34
(b) patent with ten years to run[11]	0.68	0.50
Know-how[12]	0.80	0.67

Notes

1. The calculation of the present value of capital allowances as a proportion of cost ignores (i) time lags between the end of each accounting period and the annual tax payment date, and (ii) the timing of the expenditure in relation to the date of the accounting year end.

2. $$\alpha = 0{\cdot}50 + 0{\cdot}04\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{11}}\right] + 0{\cdot}02\left[\frac{1}{(1+k)^{12}}\right]$$

3. $$\alpha = \frac{1}{34}\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{33}}\right]$$

4. $$\alpha = \frac{1}{2} \times \frac{1}{34}\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{33}}\right]$$

5. $$\alpha = \frac{1}{4} \times \frac{1}{34}\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{33}}\right]$$

6. $$\alpha = \frac{1}{9}\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{8}}\right]$$

7. $$\alpha = \frac{1}{2} \times \frac{1}{9}\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{8}}\right]$$

8. $$\alpha = \frac{1}{4} \times \frac{1}{9}\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{8}}\right]$$

9. $$\alpha = \frac{1}{10}\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{9}}\right]$$

10. $$\alpha = \frac{1}{17}\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{16}}\right]$$

11. $$\alpha = \frac{1}{10}\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{9}}\right]$$

12. $$\alpha = \frac{1}{6}\left[1 + \frac{1}{1+k} + \frac{1}{(1+k)^2} + \dots + \frac{1}{(1+k)^{5}}\right]$$

by $\alpha < 1$ apply for instance to industrial buildings even of a 'qualifying' type and trade. Hence, if we accept the assumptions of the CAPM, then we must conclude that the tax system acts as a disincentive to expand factory premises and other buildings. But even 100 per cent allowances on plant and machinery cannot always be relieved against taxable income for the year of expenditure or against the 3 preceding years under section 177(3A) of the Income and Corporation Taxes Act 1970.

5. Conclusion

Although the real world is more imperfect than the CAPM would imply, it does at least provide an insight into the likely 'direction' of the effects of taxation on investment decisions, provided of course that the tax system is correctly described by the model. Perhaps the assumptions of immediate relief for losses and the application of taxes to cash inflows and not 'accounting' inflows seem at first to be the more obvious violations of reality. Interestingly, if the firm has a large balance of tax losses brought forward then profits from a new capital project may not be taxable with the result that the investment decision is not distorted by the tax system. The analysis presented is relevant, however, for firms with a high level of guaranteed taxable inflows from other projects. As to the assumption of a cash flow tax system on inflows, although the tax base lies within an accrual accounting framework[5] to a large extent the periodic investment in debtors and creditors is self-cancelling, and the increase in inventories is now normally an allowable deduction under the stock relief legislation, a modification away from accrual accounting principles. At least for our present purposes the approximations are not unreasonable.

We have shown that under the CAPM an excess burden on the activities of the private sector occurs through the effect of imperfect tax allowances on capital expenditure. Except in the cases where taxable profits are large enough to absorb 100% tax depreciation on plant and machinery and scientific research, the present system of capital allowances reduces the expected return to an amount below that required by the post-tax level of risk. Alternatively stated, the fiscal system does not reduce the level of risk by an amount sufficient to compensate for the decline in expected returns. Investments requiring extensions to premises appear to be the hardest hit, and in particular those in the retail industry, since they do not qualify at all for capital allowances on buildings. It would therefore not be unreasonable to assume *a priori* that the tax system has been partly responsible for the low level of investment in this country.

[5] Pointon, J., *The Net Present Value Model under the Tax Imputation System*, University of Aston Management Centre Working Paper Series, Number 99, June 1978.

Transfer Pricing for Public Reporting: A Case Study

Michael Schiff

Transfer pricing, until recently, was the private turf of management accountants and economists. Their research and application focused on transfer pricing as it affects internal evaluation of performance and decision making in large decentralised organisations with the objective being to develop a pricing method which is optimal for the firm while not detracting from the prerogative of divisional or segment management.

FASB 14, 'Financial Reporting for Segments of a Business Enterprise', and the Securities and Exchange Commissions ASR 236, 'Industry Segment Reporting', set standards for public disclosure of the volume of intersegment sales and the transfer pricing method used. This has resulted in financial accounting invading this private turf with rules that may constrain management in opting for the most suitable transfer pricing method and may well put a finish to what has been a most fruitful research area.

One of the requirements of FASB 14 is that the transfer price used for public reporting be consistent with the pricing method used internally [¶010(c)]. Among the provisions of ASR 236 is one which requires disclosure of the impact of transfer pricing methods other than market prices if the method is material to an understanding of segment information.

These two requirements have resulted in a decided shift to market price transfer pricing by American corporations. Evidence for this observation is available in several studies. R. K. Mautz, in his study *Financial Reporting by Diversified Companies* (Financial Executives Research Foundation, New York, 1968, p. 36), analysed the responses of 234 large diversified companies to a question on interdivisional transfer pricing policy. Market prices was not given as one of the alternatives among the six possibilities listed. What could be indentified as an approximation of market prices was listed as 'arm's length' pricing and only 27% of the companies reporting used this method. All other companies in his sample used cost or variations thereof. Two recent surveys (Arthur Andersen, 1978 and Ernst and Ernst, 1978), using published reports prepared in compliance with FASB 14, examined reported transfer pricing methods. The former study states that 75% of 100 companies in the sample with relatively significant intersegment sales used the market price method, while the latter study observed that 55% of 75 companies surveyed used this method. One can conclude that the rule-making bodies have by edict imposed a reporting method on American industry without regard to the possible diseconomies produced by it.

This paper does not intend to expand any further on the implication of the two pronouncements on interval evaluation of performance or decision-making. Rather, it will analyse the impact of these events on the public reporting of segment performance in a company in this new environment.

The company

Monsanto Co. is a very large diversified chemical company ranking fourth among the big four of the chemical industry. Prior to FASB 14, this company's annual reports presented information on sales and profits by segments and sales by product groups within segments for the current year and history for 5 years reflecting a level of disclosure beyond official requirements. Indeed, Monsanto has for the past years received awards for the high quality of its annual reports in the annual competition sponsored by *The Financial World.*

The 1976 report

The annual report for 1976 reported a change in the divisional structure of the company which had as its objective the centralisation into one unit of the company of the responsibility for the manufacture of basic 'building block' chemical inter-

Table 1

MONSANTO CO.

Sales and Operating Income for 1975
(in millions of dollars)

	1976 Report (cost basis)		*1975 Report (market price basis)*	
Division	*Sales*	*Operating Income*	*Sales*	*Operating Income*
Agricultural Products	$547.4	$252.9	$547.4	$272.6
Chemical Intermediates	390.3	90.2	(new division)	
Commerical Products	318.7	(11.1)	512.4	(4.3)
Industrial Chemicals	852.8	193.8	1001.7	226.7
Plastics and Resins	768.3	38.8	(part of polymers and petrochemical)	
Textiles	747.2	(17.2)	764.2	(49.1)
Polymers and Petrochemical	(split into two divisions)		799.0	101.5
Totals	$3624.7	$547.4	$3624.7	$547.4

mediates at the lowest cost in support of downstream products and markets. The divisions before and after the change were:

Before	*After*
Chemical Products	Commercial Products
Industrial Chemicals	Industrial Chemicals
Polymers and Petro-Chemicals	Chemical Intermediates
	Plastic and Resins
Agricultural Products	Agricultural Products
Textiles	Textiles

The new division, Industrial Intermediates, was formed from the petrochemicals segment of Polymers and Petrochemicals, resulting in the new Plastics and Resins division, process chemicals from the Industrial Chemicals division and Textile Fiber intermediates from the Textile division.

In addition to the structural change, Monsanto changed its internal transfer pricing policy on certain large volume chemicals such as styrene monomer used in plastics and acrylonitrile used in man-made fibers from a market price to a cost basis. Product line sales and profitability were restated for the past five years to reflect this change.

Effects of the change

Table 1 shows the impact of the change in structure and transfer price policy on reports on divisional performance. The year selected is 1975, with data on the old basis and structure taken from the report of that year, and the information as restated on the new basis comes from the 1976 Annual Report.

Comparability is complicated by the appearance of a new division derived from combining parts of two existing divisions. The motivation for the changes, as stated earlier, was to support downstream products. This worked very effectively for the Textile division. Its sales were reduced by a modest 2%, but the loss went from $49.1 million to $17.2 million (a 63% change) with all of the change attributable to a profit shift to this downstream operation, wherein acrylonitrile transfers were changed from market price to cost price. The man-made fiber industry, according to one analyst (P. C. Christopherson, 'Product Pricing in the Chemical Industry,' *Financial Analysts Journal*, December 1977), constitutes a segment of the industry subject to far greater fluctuations in prices and profits than other segments of the industry. The shift to cost-price should therefore enhance the reported performance of this segment over time. The only other apparent change in reporting occurs in the Agricultural Products Division, wherein sales are unaffected but operating income is reduced by some $20 million dollars. There is no indication of the reason for this modest change, which is a change in the wrong direction, since Agricultural Products is a downstream operation.

The 1977 report

The 10K for 1977 (p. 1) states: 'Monsanto's Operating Company and World Wide data for 1977 and 1976 as shown herein have been restated to reflect new reporting requirements of the Financial Accounting Standards Board.' The restatement consisted of separating eliminations and certain corporate expenses from the operating

Table 2

MONSANTO CO.

Sales and Operating Income for 1976
(in millions of dollars)

	1976 Report		*1977 Report*	
Segment	*Sales*	*Operating Income*	*Sales*	*Operating Income*
Agricultural Products	$573.2	$236.1	$573.2	$240.6
Chemical Intermediates	476.2	148.4	476.2	152.6
Commercial Products	398.2	(2.5)	398.2	(0.1)
Industrial Chemicals	950.4	200.8	950.4	206.6
Plastics and Resins	1018.7	95.6	1018.7	100.8
Textiles	853.5	(10.6)	853.5	(1.2)
	$4270.2	$667.8	$4270.2	$699.3
Income Charges—Net		50.1		
Income Before Income Taxes		$617.7		
Eliminations				(6.8)
Unallocated Corporate Expenses				(24.7)
				$667.8
Income Charges—Net				50.1
Income Before Income Taxes				$617.7

TABLE 3

MONSANTO CO.

Reconciliation of Operating Income for 1976
(millions of dollars)

Segment	*1976 Report*	**Adjustment*	*1977 Report*
Agricultural Products	$236.1	$4.5	$240.6
Chemical Intermediates	148.4	4.2	152.6
Commercial Products	(2.5)	2.4	(0.1)
Industrial Chemicals	200.8	5.8	206.6
Plastics and Resins	95.6	5.2	100.8
Textiles	(10.6)	9.4	(1.2)
	$667.8	$31.5	$699.3

*Adjustment for Eliminations and Unallocated Corporate Expenses, 6.8 (Eliminations) +24.7 (Unallocated Corporate Expenses) = 31.5.

companies' results, which amounts had previously been allocated.

The report states further that 'total sales between operating companies made on a *market basis* were $195.0 million and $181.7 million for 1977 and 1976 respectively. These sales were not significant for any operating company except Chemical Intermediates ($127.2 million for 1977; $123.8 million for 1976) and Industrial Chemicals ($40.6 million for 1977; $36.2 million for 1976).'

These statements indicate a shift from the cost basis adopted in 1976 principally as a result of the formation of the Chemical Intermediates Company in that year to a market price basis in 1977. However, the reported results in both the 10K and Annual Report for 1977 do not appear to incorporate such a change.

Table 2 shows segment results for 1976 as reported in 1976 and 1977. The operating income of each segment is shown after adjustment for eliminations and corporate expenses, which was an acceptable practice at that time. The 1977 Report restates the operating income exclusive of the adjustment. A reconciliation of the operating income as shown in both reports was derived by taking the differences in operating income and the sum of the differences; $31.5 million is equal to the items eliminations and unallocated corporate expenses (Table 3).

Conclusion

It was observed at the outset that the public reporting standards for transfer pricing set by the Financial Accounting Standards Board and Securities and Exchange Commission encroached on a field which has previously been the domain of economists and management accountants. Samplings of financial reports issued in accordance with these new standards suggested a significant shift to the use of market prices for intracompany sales. Recognising the consistency requirements of FASB 14, the wide acceptance of the market price alternative could have serious implications on performance of segments and decisions on resource allocation. The Monsanto Co. case described in this article suggests a word of caution to the researcher in using survey data. Surely Monsanto Co. would be classified as a company applying the 'market basis' for intracompany sales in any survey when, indeed, the analysis shows that the cost basis was in fact continued from the prior year.

Book Review

Consolidated Accounts in Europe. *Ernst & Whinney.* Financial Times Business Information Ltd., 1980. xvii + 185 pp. £48.

Financial Times World Survey of Annual Reports 1980. *Michael Lafferty and David Cairns.* Financial Times Business Information Ltd., 1980. v + 423 pp. £88.

As Michael Lafferty points out in his foreword to *Consolidated Accounts in Europe*, implementation of the EEC's proposed seventh directive on consolidated accounts will represent a major landmark in international accounting development. The seventh directive was, whilst this book was being written, still very much under discussion and the amended text of January 1979, reproduced in an appendix, has already undergone several changes.

The book, prepared by the Technical Department of Ernst & Whinney's European Continental firm in Brussels, is in many ways a logical follow-up to the same firm's very useful series of books on the impact of the Fourth Directive. Like them, it can be strongly recommended. Although the product of an 'Anglo-Saxon' international accounting firm it shows a clear understanding, and even sympathy for, continental European ways of looking at consolidated accounts.

A book of this nature inevitably tends to date. Chapter II, however, on the 'consolidation concept' will be worth reading for several years to come. It includes a discussion of the needs of the users of consolidated accounts, a list of the major unresolved technical issues (e.g. the amortisation of goodwill) and general issues (e.g. social reporting), a brief look at the historical background, a discussion of the attitudes of the UN, the OECD, the IASC and the EEC and a look at consolidation philosophies. These last are succinctly summed up as follows:

> the *proprietary* concept,
> which takes a strictly
> capitalist view, ... the
> *entity* or *economic* concept
> which takes a wider and
> more social view, ... the
> *parent company* or legal
> concept situated somewhere
> in between

Chapter 3 analyses the proposed seventh directive with special reference to the major issues outstanding, *viz.* the definition of a group, horizontal consolidation, consolidation by entities other than limited companies, sub-group consolidations, community consolidation and goodwill.

Chapter 4 surveys the consolidation practices of 231 of the larger European companies, based on the latest published annual reports available at 31 August 1979. A questionnaire was sent to 270 European companies and 102 interviews were carried out in 12 countries. 188 of the 231 companies published consolidated financial statements. The only countries in which all the companies in the survey consolidated were Denmark, Germany, Ireland, the Netherlands, the UK and Sweden. *None* of the 9 Spanish companies published consolidated statements and only 6 of the 19 Italian companies. The 7th directive will, Ernst & Whinney conclude, make consolidated accounts not only mandatory but also provide a reasonable degree of comparability. But it will be harmonisation not standardisation and the apparent uniformity will in many cases be more of form than of substance.

The 7th directive will clearly have a great impact in all EEC countries. It is rather alarming, therefore, that Ernst & Whinney believe that most companies are unaware of the impact the resultant national legislation will have. Chapter 5 is a case study of how one large French company, Elf Aquitaine, tackled its consolidation problems.

The book also contains a number of useful appendices. The impact of the 7th directive on each EEC member state is summarised in two pages in Appendix A, which makes it clear, for example, that the amount of impact on British companies depends very much on the extent to which requirements for horizontal and sub-group consolidations and 'economic' definitions of a group survive into the final draft. Appendix B is a two page summary of the requirements and recommendations of the 7th directive, IAS 3, the UN and the OECD.

Appendix C sets out in 19 pages the present legislation, requirements and practices in the

United States. It needs to be remembered that consolidated statements are largely an American invention and that what is done in the United States in this field, diffused as it is by American multinationals and the international accounting firms, is of interest to us all.

The *Financial Times World Survey* is essentially an extension and updating of the 1979 Survey of *100 Major European Companies, Reports and Accounts* which was reviewed in the Winter 1979 issue of this journal. The 1980 Survey covers 20 countries and 200 companies with sections on financial statements, accounting policies, auditing and auditors, non-financial statement information, and timeliness. It is an impressive volume which should prove of great use to teachers of and researchers in the rapidly developing field of comparative international accounting.

The authors of both these books deserve our gratitude. Those who have worked in this area can appreciate how much time and effort they must have devoted to their task. To the publishers the reviewer feels rather less grateful: was it really necessary to price these books in such a way as to ensure that university libraries, let alone staff and students, are unable to afford them?

University of Exeter R. H. Parker

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Distributable Profit and the Pursuit of Prudence*

D. A. Egginton

Distributable profit, a concept with a chequered history, has recently gained a new lease of life. A major reason has been the heightened international discussion of methods of accounting for price changes ('inflation accounting'), in which several different measures have been claimed to represent distributable profit. A further development, concerning the UK alone, has been the recent enactment of a statutory definition for the distributable profit of companies.

Scepticism of the benefits of the distributable profit concept has prompted this paper. Any division of *past* gains between distributable and undistributable elements is an unpromising basis for rational decisions on the *future* disposition of corporate resources. In discussions of profit measurement it seems that distributable profit is liable to be employed as a Trojan horse for the advancement of opinions on issues, like the burden of corporate taxation, that would be better considered explicitly on their own merits. As for the new UK legal definition of distributable profit, that apparently owes far more to European legislative harmonisation than to any rational assessment of distribution barriers which might improve the financial conduct of UK companies.

The objectives of this paper are to explore the purposes that a profit constraint on dividend distributions may be intended to serve, and to consider the extent to which those purposes might be achieved by a measure of distributable profit. The examination will suggest that financial prudence is the central aim of the distributable profit concept, but that a periodic measure of *distributable* profit *ex post* is at best unnecessary for prudent corporate decision-making and at worst can hinder the efficient allocation of economic resources. The conclusions will suggest that financial accounting theory would be healthier without the concept of distributable profit, that the prudential aims of a statutory definition of distributable profit might be more effectively achieved by other means, and that the elimination of the distribution issue would allow attention to be focussed on more fruitful applications of profit measurement.

Distributable profit and capital maintenance

The purposes for which profit (or 'business income') measures may be employed are widely acknowledged to be diverse. Many lists would include the possibilities of using profit as a basis for taxation, as an indicator of entity and management performance, as a basis for the projection of future earnings and/or as a guide for the distribution of rewards to owners. These purposes, which are not intended to be exhaustive, are mentioned to emphasise that only *one* of several views of the potential utility of profit measurement is under detailed consideration. The use of profits as a guide for distributions is the widest possible way of describing the topic to be examined. However, it will be argued that an authentic concept of distributable profit (henceforth abbreviated to DP) represents something far less tentative than a mere 'guide'.

The discussion will focus on the DP concept in relation to the dividend distributions of companies, although the extra-legal aspects could apply equally to unincorporated businesses. DP is often defined as a pre-tax amount, from which a company distributes both taxes and dividends,[1] but the present concern with distributions to owners adopts a post-tax view. Thus the basis of corporate taxation is taken as given. No suggestion of equating taxable profit and accounting profit is implied; on the contrary, there is a presumption that different objectives may lead to different solutions.[2]

---

*A revised version of a paper presented to the South Western Accounting Group of the Association of University Teachers of Accounting at Bristol on 4 January 1979. The constructive comments of the discussant Professor E. A. French and other participants at that conference, those of my colleagues J. J. Forker and Professor G. Whittington, and those of Professor T. A. Lee, are gratefully acknowledged.

[1] For examples of clear definitions along these lines see A. G. Coenenberg, 'Accounting for price changes: An analysis of current developments in Germany', *Journal of Business Finance and Accounting*, Spring 1976, p. 54; and R. F. Vancil and R. L. Weil, 'Current replacement cost accounting, depreciable assets and distributable income', *Financial Analysts Journal*, July/August 1976, p. 38.

Two very powerful influences on contemporary accounting attitudes to DP have been some widely quoted sentences of an eminent economist and a related view of profit espoused by the UK government's Committee on Inflation Accounting. The first of these influences is the well-known Hicksian dictum on the income of an individual:

> The purpose of income calculations in practical affairs is to give people an indication of the amount they can consume without impoverishing themselves. Following out this idea it would seem that we ought to define a man's income as the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning.[3]

The Sandilands Committee on Inflation Accounting linked profit to distributability and went on to adapt the Hicksian quote to company profit:

> 'Profit for the year' is a practical business concept used as a guide for prudent decision making by companies. It may be usefully defined as the amount of the total gains arising in the year that may prudently be regarded as distributable.
>
> In our view the concept of profit of a company which we have been discussing is parallel to Sir John Hicks' concept of an individual's income. We might define a company's profit by adapting Sir John Hicks' definition as follows:
>
> 'A company's profit for the year is the maximum value which the company can distribute during the year, and still expect to be as well off at the end of the year as it was at the beginning'.[4]

In the two opening sentences of this quotation the Sandilands Committee captures the essence of the DP concept. The definition of *profit of the year as the total gains arising in the year that may prudently be regarded as distributable* has five important implications:

1. Prudence is a desirable objective in financial decision making.
2. Prudence will be served by an appropriate measure of DP.
3. Profit of the year is determined by its distributability, so that any other purposes for which profit may be used are considered as subsidiary to that characteristic.
4. Gains arising in the year can be dichotomized into distributable and undistributable gains.[5]
5. DP represents the maximum amount available for distributions, since any distribution in excess of that amount must be regarded as imprudent.

The first two points above represent the basic assumptions on which the DP concept rests. Prudent decision making will be accepted here as a desirable objective, subject to later interpretation of the word 'prudent'. It is the second assumption, that DP can make a significant contribution to prudent decision making, which is being questioned. The remaining three points describe the distinctive features of the DP concept. Of these, the last is crucial in setting a distribution constraint—which may depend on convention or the law for its observance.

Although some form of distribution constraint is inherent in the DP concept, it must be stressed that the constraint is not a necessary attribute of profit measurement in general nor of a Hicksian definition of income in particular. When the Sandilands Report adapted Hicks in the quotation above, a company's profit was defined as *the maximum value it can distribute and still expect to be as well off.* That definition does not exclude the possibility that a company may have good and prudent reasons for deciding to be less 'well off' at the end of the year. Capital (including past retained profit) is the normal measure of how well off a company is at the beginning of a year, and provides a benchmark for measurement. When profit is stated to be the amount that *can* be distributed and still leave capital maintained intact, that is a neutral statement of the increment in value which occurs before distribution takes place; no constraint on the distribution decision need be assumed. *The notion of capital maintenance can therefore serve as a neutral benchmark against which to measure a company's success in increasing its command over resources in an accounting period,* without prejudging the company's subsequent disposition of its total resources in any way. Such a benchmark view appears to have been common ground in the exchanges on maintaining capital intact between Pigou, Hayek and Hicks in the 1940s,[6] in which different views on physical and economic capital were at issue.

---

[2] The present base for UK corporation tax is, of course, very different from accounting profit. Arguments have been advanced for extending the existing 'flow of funds' characteristics of the tax base still further. See *The Structure and Reform of Direct Taxation: Report of a Committee chaired by Professor J. E. Meade*, George Allen and Unwin, 1978, ch. 12.

[3] J. R. Hicks, *Value and Capital*, 2nd ed., Oxford University Press, 1946, p. 172.

[4] *Report of the Inflation Accounting Committee*, HMSO Cmnd. 6225, 1975, paras. 95 and 98.

[5] There is a parallel here with dichotomizing income between operating and holding gains. See D. F. Drake and N. Dopuch, 'On the case for dichotomizing income', *Journal of Accounting Research*, Autumn 1965, pp. 192–205.

However, capital maintenance as a neutral benchmark is clearly alien to the DP concept; the distribution constraint rests on the premise that capital *should* be maintained. The Sandilands Report itself used that sort of terminology in referring to the dangers of distributing 'sums that should have been retained to maintain capital'.[7] Moreover the desirability of a DP measure to safeguard capital seems to have become part of the conventional wisdom,[8] summed up by the UK accountancy bodies as follows:

> There is considerable uncertainty at present surrounding the definition of distributable profits in case law, mainly due to the various legal decisions made over the last 100 years or more. The Jenkins Committee recommended that the Companies Acts should include a definition of distributable profits, and more recently the EEC Second Directive and Draft Fourth Directive have incorporated certain restrictions on what is distributable. The proposed current cost accounting convention will require consideration of the legal definition of distributable profits, particularly in the context of 'maintaining the substance of the business'....
>
> ....
>
> a statutory definition of distributable profits is required...[9]

It would seem that the accountancy bodies were objecting as much to the permissiveness of the law as to its uncertainty. Accountants have generally taken a much more restrictive view of distributability than UK case law, which was developed by the Courts to allow considerable freedom to companies in dividend distribution.[10] The following excerpts from Gower's *Modern Company Law* indicate that the legal rules prior to the Companies Act 1980 were more permissive than accounting practice:

> (1) Dividends cannot be paid if this would result in the company's being unable to pay its debts as they fall due. To this overriding condition of solvency all the following rules are subject.
>
> (2) Losses of fixed assets need not be made good before treating a revenue profit as available for dividend, and it is not legally essential to make any provision for depreciation...
>
> (3) Losses of circulating assets in the current accounting period must be made good, however, for otherwise there is no profit...
>
> (4) A realised profit on the sale of fixed assets, may be treated as a profit available for dividend, at any rate if there is an overall surplus of fixed and circulating assets over liabilities. Whether it is then necessary to revalue *all* fixed assets is not clear, but accountants take the view that it is...
>
> (5) Regarding the position of unrealised capital profits on a revaluation of assets, there is a conflict of views between the Scottish and the English courts. The former decided that such a profit was not distributable.... But in England... unrealised profits can be distributed by way of a dividend...
>
> (6) Losses... made in previous accounting periods need not be made good; a dividend can be paid provided there is a profit on the year's trading...
>
> (7) Undistributed profits of past years remain profits in future years.

---

[6] Reprinted in R. H. Parker and G. C. Harcourt, eds., *Readings in the Concept and Measurement of Income,* Cambridge University Press, 1969, pp. 123–38.

[7] *Op. cit.,* para. 733.

[8] The conventional wisdom on the utility of distributable profit has not gone unchallenged; it has been questioned in different ways by a number of academics. For examples see D. Solomons, 'Economic and accounting concepts of income', *Accounting Review,* July 1961, pp. 374–83 (reprinted in R. H. Parker and G. C. Harcourt, eds., *Readings in the Concept and Measurement of Business Income,* Cambridge University Press, 1969); T. A. Lee, 'Enterprise income: Survival or decline and fall?', *Accounting and Business Research,* Summer 1974, pp. 46–60; and E. A. French, 'The evolution of the dividend law of England', in W. T. Baxter and S. Davidson (eds.) *Studies in Accounting,* Institute of Chartered Accountants in England and Wales, 1977.

[9] *Improvements to Company Law,* The Consultative Committee of Accountancy Bodies, 1977, para. 125.

[10] The freedom accorded by company law has, of course, been sharply curtailed at times by governmental dividend restraints with economic policy objectives.

> The foregoing rules attempt to state the strict legal position... [But]... *accounting practice is considerably stricter than the law seems to be.*[11]

Thus a restrictive approach to dividend distribution, consistent with the DP concept, is well established in the conventional wisdom of accounting.

Prudence: definition and context

It was said earlier that the DP concept rests on assumptions that prudence is desirable in financial decision making and that a DP measure is conducive to prudence. The meaning attached to the word prudence is therefore of central importance. The Concise Oxford Dictionary provides the following definition:

> *prudent* (Of person or conduct) careful to avoid undesired consequences; circumspect, discreet; hence... PRUDENCE, PRUDENTLY.

The wording 'careful to avoid undesired consequences' seems entirely apposite to the issue of financial decision making; it suggests rational assessment rather than blind defensiveness. The phrase will therefore be accepted as defining prudence and prudent conduct. It may be noted that the definition is fundamentally different from that adopted by the UK accountancy bodies in their 'concept of prudence', which describes certain accounting conventions without offering a rationale.[12] The definition leads usefully to two questions which show that prudence can only acquire operational meaning in a specific context. Who is being careful? Whose interests are being protected in the avoidance of undesired consequences?

It would seem that the duty of being careful over distributions must rest with company management, since the distribution decision is basically managerial. The DP constraint on distributions is presumably intended to steer management away from decisions producing undesired consequences, and the question of whose interests are to be protected/maintained is therefore crucial. There are three different answers worthy of examination, of which the first two represent well-known standpoints in financial accounting theory.

In accounting there are two strongly established views of the objectives and behaviour of firms that are particularly relevant to the DP issue: the proprietary and entity theories. Following Gynther's analysis,[13] the proprietary theory views the company primarily as the property of its shareholders, so that:

> When corporations do distribute dividends, they are seen to be actually placing in the hands of the proprietors something which has been part of their individual property for some time.[14]

On the other hand, the entity theory personalises the firm as something separate and distinct from those who contributed capital to it:

> As profits are earned by the entity, they become the property of the entity; they accrue to the shareholders *only* if and when a dividend is declared.
>
> ...those who have the entity viewpoint actually see the net assets as being the property of the entity itself and not that of the shareholders.[15]

These theories provide two different contexts in which to examine the DP concept. In the proprietary context the DP approach can be regarded as seeking to maintain proprietary capital, whereas in the entity context the DP measure would serve the maintenance of entity capacity.

There are other views on the ways in which the interests of different groups may be accommodated for accounting purposes, but they are less clearly identifiable with the DP concept. Hendriksen,[16] after examining the proprietary and entity theories, adds a further four: residual equity, commander, enterprise and fund. Residual equity treats 'all investors in a company except common stockholders ... as outsiders',[17] which can be regarded as a proprietary view for DP purposes. In the commander theory 'the emphasis is on what the commander [= manager] has done rather than on the special interests of owners or other interested groups',[18] which provides no fresh contribution to the notion of capital maintenance for the DP concept (although it may well overlap with features of the entity theory to be considered later). Consequently, the residual equity and commander approaches can be excluded from further consideration.

---

[11] L. C. B. Gower (with co-authors), *The Principles of Modern Company Law*, 3rd ed., Stevens, 1969, pp. 117–20. Italics have been added in the final sentence of the quotation.

[12] The definition provided in paragraph 14 of *Statement of Standard Accounting Practice No. 2*, Accounting Standards Steering Committee, 1971, runs: 'the concept of prudence: revenue and profits are not anticipated, but are recognised by inclusion in the profit and loss account only when realised in the form either of cash or of other assets the ultimate cash realisation of which can be assessed with reasonable certainty; provision is made for all known liabilities (expenses and losses) whether the amount of these is known with certainty or is a best estimate in the light of the information available'.

[13] R. S. Gynther, 'Accounting concepts and behavioral hypotheses', *Accounting Review*, April 1967, pp. 274–290.

[14] *Ibid*, p. 275.

[15] *Ibid*, p. 276.

[16] E. S. Hendriksen, *Accounting Theory*, Revised Edition, Irwin, 1970, pp. 495–507.

The enterprise and fund theories share the distinctive feature that they are 'neutral with respect to the interests of any specific group'.[19] Under the enterprise theory 'the corporation is a social institution operated for the benefit of many interested groups'.[20] The fund theory 'abandons the personal relationship assumed in the proprietary theory and the personalization of the firm ... under the entity theory ... [and] ... substitutes an operational or activity-orientated unit as the basis for accounting'.[21] In a recent article in this journal Lee[22] suggested that a grouping of these two approaches with the entity theory would provide an appropriate alternative to the proprietary view, giving a framework for examining financial reporting issues such as inflation accounting. But, at least as far as the application of the DP concept is concerned, it will be argued later that the entity theory has a distinct managerial bias; consequently Lee's grouping would be inappropriate for the present purposes.

What is needed for a complete examination of the DP concept is a further category encompassing the interests at stake in prudent decision-making that may not be represented by either the proprietary or entity viewpoints. These interests include those of subordinate employees, lenders, trade creditors and of anyone else who might suffer from the financial instability of a company. Employees as insiders have some relevance to the entity viewpoint, but application of the entity theory would not necessarily serve the interests of employees as a whole. The common feature of these interests is a fundamental concern with the entity's continuing ability to meet its financial commitments—which will be considered under the heading of *maintenance of financial capacity.* That heading does not fit conveniently with the enterprise and fund theories, but it does go a considerable way towards sharing their neutrality.

The DP concept can be examined for its potential in serving the three major objectives now identified: the maintenance of proprietary capital, the maintenance of entity capacity and the maintenance of financial capacity. The first two are mutually exclusive viewpoints, but either could be consistent with the third objective.

Maintenance of proprietary capital

Under the proprietary view, company decision making is intended to serve the interests of shareholders. Proprietorial objectives can be assumed to be concerned with enhancing personal income and/or wealth, although that need not imply any lack of social responsibility where ethical constraints apply.[23]

The focus on individual shareholders provides an opportunity to look more closely at the Hicksian central criterion, that income is what a person can consume during a week and still expect to be as well off at the end as at the beginning. Immediately after his initial expression of this maxim Hicks went on to say:

> Thus, when a person saves, he plans to be better off in the future; when he lives beyond his income, he plans to be worse off.[24]

In this there is a recognition that decisions to save and dissave can be equally rational, a symmetry that is not extensively emphasised in accounting discussions of income. Moreover, dissaving can be entirely *prudent* in the full sense of being careful to avoid undesired consequences.

Consider a person of retirement age who has accumulated capital for support during old age; to live on an income which maintained this sum could have the undesired consequence of frugal living, but to convert the sum into a life annuity (possibly price indexed) could avoid both frugality and the other undesired consequence of having to eke out the sum over a life of uncertain length. That satisfies the prudence definition, even though the individual plans to be progressively worse off in terms of capital, measured by the capitalised value of the annuity over life. Admittedly that example would not qualify as dissaving if Hicks' definition is interpreted as maintaining consumption *over the person's life* but, even on that view, cyclical patterns of saving and dissaving are commonplace and entirely capable of being prudent—for example, when a person saves for the establishment of a home and later dissaves for maintenance and education of children. Thus there need be no presumption that personal dissaving is necessarily imprudent.

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[17] *Ibid*, p. 501, quoting from G. J. Staubus, 'The residual equity point of view in accounting', *Accounting Review*, January 1959, p. 13.

[18] *Ibid*, p. 505.

[19] *Ibid*, p. 505.

[20] *Ibid*, p. 502.

[21] *Ibid*, p. 504.

[22] T. A. Lee, 'The accounting entity concept, accounting standards, and inflation accounting', *Accounting and Business Research*, Spring 1980, pp. 176–186. I am grateful to Professor Lee for a pre-publication copy of his paper, which stimulated revisions in my own approach.

[23] The compatibility of ethical constraints with an objective of proprietorial wealth enhancement was demonstrated long ago by Quaker entrepreneurs like the Frys, Rowntrees, Tukes and Gurneys, whose ethics and social scruples appeared foolhardy at first to their business contemporaries in the 17th and 18th centuries. Gynther, however, takes the view that 'social responsibility notions seem to fit completely within the entity viewpoint', *op. cit.*, p. 278.

[24] *Op. cit.*, p. 172.

Hicks considered three approximations to his central criterion of income. Income 1 was the spending that would maintain the capitalised value of the individual's prospective receipts; Income 2 was the spending that would allow the individual to spend the same amount in succeeding weeks; and, by spending Income 3, the individual could expect to maintain spending *in real terms* in each ensuing week. But all three are *ex ante* concepts of income, representing the personal expectations of the individual. Hicks singled out the first alone as being capable of objective measurement *ex post* (using market prices in assessing capital values), only to dismiss its relevance to consumption decisions:

> The capital value of the individual's property at the beginning of the week is an assessable figure; so is the capital value of his property at the end of the week; thus, if we assume that we can measure his consumption, his income *ex post* can be directly calculated. [However]... On the general principle of 'bygones are bygones', [income *ex post*] can have no relevance to present decisions. The income which is relevant to conduct must always exclude windfall gains; if they occur, they have to be thought of as raising income for future weeks (by the interest on them) rather than as entering into any effective sort of income for the current week.[25]

Accountants do not find the objective assessment of capital values based on market prices an entirely easy matter, particularly when faced with assessing a company's resources and with the choice of entry and exit prices. But accountants who advocate notions of DP and capital maintenance that echo the Hicksian central criterion are caught on the horns of a different sort of dilemma. They can take the relatively objective measure of the differences between market-based capital values as DP and close their minds to the awkward thought that 'it can have no relevance to present decisions'. Or they can attempt to estimate windfall gains, the *unexpected* gains of the period, for adding back to capital as undistributable—leaving DP as the *ex post* approximation of expected income.

The first alternative might be consistent with some versions of the proprietary view: provided capital originally entrusted to the company by owners is maintained (either in money or in purchasing power terms) *any* surplus of past periods could be regarded as distributable. The second alternative, of separating undistributable gains as surrogates for windfalls, seems a more plausible rationale for the way the DP concept dichotomises past gains into distributable and undistributable elements. For the windfall justification to be sustained it must be accepted that any distinction between distributable and undistributable gains represents a view of the way business expectations are or should be formed: companies are to be provided with rules that determine *ex post* the windfall-free *ex ante* income for distribution decisions. Inevitably there is a rich field for different sets of rules.[26] However, both alternatives contain a fatal flaw so far as the proprietary theory is concerned: they disregard the paramount rights of owners over their property.

Under the proprietary view it would seem that saving and dissaving should remain the personal concern of owners. Either a company is used directly by the controlling shareholders as a simple extension of their own saving/dissaving decisions, or the company is regarded as a financial agent acting on behalf of shareholders. In the latter case the company can be assumed to serve neoclassical economic objectives, which may be couched in terms of maximising the present value of the owners' stream of prospective receipts from the company's shares (including receipts on disposal). The central principle of optimal decision making would require that the company should retain only those resources that can be employed more profitably in the company than in the hands of shareholders; any surplus would be returnable to shareholders irrespective of whether it derived from profit or capital. As with most principles, enunciation is easier than implementation: significant assumptions need to be made on such issues as the treatment of risk in relation to the shareholder's overall portfolios, the discounting rates to apply to expected receipts, the transactions costs of distributions and re-investment, and the intricate implications of personal and corporate taxation. But a DP constraint does not make these problems disappear; it merely renders options involving the return of surplus capital unavailable, or at least much more difficult.[27] Thus, in curbing the redeployment of corporate funds, a DP constraint cannot aid optimal proprietary decision making, although it could hinder the efficient allocation of economic resources.

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[25] *Op. cit.*, p. 179.

[26] An examination of a number of different views, including seven sub-divisions of one basic notion of capital, is contained in a recent paper by D. P. Tweedie: *Financial reporting, inflation and the capital maintenance concept* (received August 1978, prior to publication). Tweedie explicitly recognises the Hicksian connection and states: 'The capital maintenance concept is founded on the Hicksian principle that income can only be measured after initial capital has been maintained intact, i.e. the future *should not* be prejudiced by an over-distribution of gains during the year'. (Italics added.)

There remains the possibility that the reduction of options enforces some degree of good behaviour in the company's activities on behalf of shareholders. This appears to have been the original intention of the legal doctrine of capital maintenance. French, in a paper on the evolution of dividend law in England, ascribes the origins of the legal doctrine to the eighteenth century charter corporations, in which 'the policy... was originally more to protect the shareholders than the creditors.'[28] The return of capital to shareholders who believe they are receiving dividends from the profits of a lucrative enterprise provides scope for financial manipulation of a sort that has not been confined to the eighteenth century. Two basic dangers are involved: the first is that investors will project dividends and/or profit to provide a basis for valuation of shares, and the second is that the company will be drained of resources and forced into unplanned liquidation. The first danger arises not from the dividends themselves but from a lack of information on the financial performance of the enterprise—a gap that twentieth century disclosure requirements go a long way towards filling.[29] In the face of deliberate fraud, of course, a DP constraint and disclosure requirements are equally likely to be defeated. Avoidance of the danger of drained resources requires that the company's resources should be sufficient for its financial health before distributions can take place—a requirement that DP does nothing to serve, but which is more suitable for consideration later under the maintenance of financial capacity.

Maintenance of entity capacity

The aims of decision making in the proprietary view were unmistakable, but the purposes to be assumed for the entity theory are more complicated. When net assets are 'property of the entity itself' and profits 'become the property of the entity' the aims of decision making must depend on the objectives ascribed to the entity. This property-owning creature is endowed with an independent existence that suggests it has lifelike urges to survive and multiply—which can be more appropriately expressed as aggrandisement of the entity. A basic objective of aggrandisement of the entity accords with the entity philosophy, and offers a distinct alternative to the proprietary theory. Instead of aiming for the most profitable use of shareholders' funds, the company's management would maximise the entity's command over economic resources. In decision making, the interests of the entity would override those of shareholders. For example, a potentially lucrative project might be rejected because it involved some risk to the entity's survival (even though shareholders could diversify their portfolios against the risk) or a policy of reinvesting profits in a low return industry might be adopted to secure the entity's future (even though shareholders could invest elsewhere for higher returns).

Significantly it has been suggested that the people most likely to hold the entity view are company decision makers:

> It is hypothesised that most corporation employees to whom responsibilities have been delegated (including controllers and account-

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[27] A constraint can be effective without being insurmountable. For example, legal reduction of share capital is available in UK law, but a company's management would need considerable determination to embark on satisfying the requirements of Sections 66–71 of the Companies Act 1948.

[28] *Op. cit.*, p. 307.

[29] An example is provided by the classic case of the Royal Mail Steamship Company, in which dividends and apparent profits were maintained from hidden reserves ('The case of the Royal Mail', in W. T. Baxter and S. Davidson, eds., ***Studies in Accounting Theory***, 2nd ed., Sweet and Maxwell, 1962, pp. 452–61, and *R. v. Kyslant* [1932] 1 KB 442, CCA). That type of manipulation could not have been prevented by a DP constraint, but repetition was effectively eliminated by the disclosure of reserve movements under the Companies Act 1948.

> ants) hold the entity concept, and that the higher up the hierarchical scale these people are situated, the more strongly they tend to hold this concept... and they tend to look upon shareholders as being important to the corporation, but not as owners of it.[30]

Self-interest is the unmentioned motivator which makes the suggestion in this quotation entirely convincing: the aggrandisement of the 'autonomous' entity aids both the security and advancement of management in direct relation to the manager's position in the hierarchy. Thus the entity view qualifies as the accountant's counterpart to economic theories of managerial capitalism,[31] in which the objectives espoused by managers are seen as paramount in determining business activity. An alternative argument might be advanced for kinship with the behavioural theory of the firm of Cyert and March,[32] in which the actions of the firm are seen as being determined by relative power within a coalition of self-interested participants—owners, managers, employees, suppliers and so on. But a pure coalition viewpoint seems closer to the neutral reporting stance of the enterprise or fund theories than to the entity theory.

In the entity context, DP is determined after maintaining a measure of capital which is commonly couched in terms of entity capacity. Certain types of gain have to be labelled undistributable (and losses made good) in order to maintain capacity, and it was argued earlier that the determination of these surrogate windfalls requires assumptions about the way business expectations are, or should be, formed. Thus there is ample scope for different opinions. One well known example is Gynther's concept of physical capacity maintenance:

> They [insiders] want to see the entity's... physical stock of assets and operating capacity maintained from period to period before arriving at a profit.[33]

Another view which has recently had considerable influence in the UK is that of Godley and Cripps, which might be termed geared capacity maintenance:

> ... the distributable surplus [is the residue after] having maintained fixed and working capital intact while also retaining the initial ratio of debt to shareholders' funds.[34]

Such views of capacity maintenance are latter-day versions of the original legal doctrine of capital maintenance that was discarded by the English courts around the turn of the century. The reasoning that influenced the courts is described by French:

> ... [A] weakness of the capital maintenance doctrine, and the one which chiefly exercised the reforming judges, was that it was an economic nonsense.... Their fears can be illustrated by considering a steamship company, either not in debt or well able to pay its debts, that had four [uninsured] boats. Suppose three of these boats were trapped in a harbour during a hurricane and were sunk. The other, which was elsewhere at the time, survived and continued to do profitable business. The capital maintenance doctrine would require that these profits be retained by the company until such time as the value of the net assets again equalled the paid up share capital. The resulting non-payment of dividends for many years would have a disastrous effect on the price of the company's shares, and on any shareholders who depended on its dividends for their daily means. In addition, a misallocation of resources would occur at times when investment in the company's trade was less rewarding than investment elsewhere....[35]

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[30] Gynther, *op. cit.*, p. 284.

[31] Expressed in such works as A. A. Berle and G. C. Means, *The Modern Corporation and Private Property*, Macmillan, New York, 1932; J. H. Burnham, *The Managerial Revolution*, Putnam, 1942; and R. Marris, *The Economic Theory of Managerial Capitalism*, Macmillan, London, 1967.

[32] R. M. Cyert and J. G. March, *A Behavioral Theory of the Firm*, Prentice-Hall, 1963.

[33] R. S. Gynther, *Accounting for Price Level Changes: Theory and Procedures*, Pergamon, 1966, p. 46.

[34] W. Godley and G. C. Cripps, *The Times*, 1 October 1975. This approach appears to have been the forerunner of methods espoused by the New Zealand Richardson Committee (*Report of the Committee of Inquiry into Inflation Accounting*, Government Printer, Wellington, 1976), and by the UK profession in *Inflation Accounting—An Interim Recommendation*, Accounting Standards Committee, 1977, and in *SSAP 16: Current Cost Accounting*, Accounting Standards Committee, 1980. The Godley and Cripps gearing adjustment introduced a new dimension to the notion of capital maintenance; their basic method, which relates only to the entity's specific price indices, would seem to belong to the entity school, while the proprietary viewpoint is more likely to be accommodated by their version which extends to 'real terms' by further general price index adjustments (permitting a proprietary consumption stance). However, one academic sees the gearing adjustment in any form as representing the proprietary view: C. Kennedy, 'Inflation Accounting: Retrospect and Prospect', *Cambridge Economic Policy Review*, 1978, pp. 58–64.

[35] *Op. cit.*, p. 315.

The steamship example adopts assumptions about dividends and alternative investments that would be consistent with the proprietary theory—which indirectly draws attention to the seductive nature of entity capacity maintenance. Supremacy of the entity absolves decision makers from having to make certain awkward choices that could threaten their own status and security: when net assets and profits belong unreservedly to the entity, depletion of the entity's resources ranks as a dereliction of duty. Thus a *behavioural* entity theory about the beliefs of decision makers becomes transformed into a comforting *normative* entity theory about how decision makers should act. A theory that most company decision makers are inclined to act in a particular way is insufficient ground for inducing the remainder to follow suit.

Paradoxically, a full acceptance of the entity's supremacy should render a capacity maintenance objective redundant in any case. If all resources and profits belong to the entity there is no need for a mere maintenance concept to bolster the entity's autonomy; all actions can be directed towards the entity's growth. 'Prudent' decision-making would ensure that dividends were paid at a level sufficient to discourage unwelcome takeover bids or other repercussions that could threaten the maintenance of the entity and its management,[36] while the remaining profits would be retained to augment the entity's growth. The observable practices of many widely owned companies are not inconsistent with such a policy: corporate objectives of stability in dividend payments are well documented,[37] and a company that persistently distributed all of its declared profits would be very rare indeed.

There is, however, a more subtle interpretation of the entity viewpoint that needs to be considered. The entity may be seen as subject to a variety of 'outsider' pressure groups competing for a slice of the rewards from operations. The major groups involved are shareholders, employees and the tax authorities. The capacity maintenance criterion would provide a line which could be used, according to disposition, to defend the golden goose against excessive demands or to force it to disgorge its surplus. The difficulty with this approach is that arguments, ostensibly concerned with where the line should be drawn between distributable and undistributable gains, are often really directed to broader controversies like the level of corporate taxation or the relative rewards of labour and capital. It would be more fruitful to consider the tax basis explicitly and separately, having regard to such economic policy issues as the influence of tax allowances on investment decisions. As for wage bargaining, the possibility that profits may have some peripheral relevance to arguments about 'ability to pay' does nothing to support a DP constraint on dividends: employees normally get paid despite a company loss, and dividends are also commonly paid in such circumstances if accumulated past profits are available. Such distribution decisions are, of course, like any others in being subject to corporate expectations and liquidity.[38]

Thus it would seem that prudent decision making needs no DP constraint. Nor can the constraint do anything significant to enforce prudence; there is nothing to prevent a company from adhering to the DP constraints and simultaneously over-extending its financial commitments—an issue which returns the discussion to financial capacity.

Maintenance of financial capacity

A company's ability to meet its financial commitments cannot be readily expressed in a single measure; such ability depends on many things like the time structure of its liabilities and assets, its potential for generating earnings, the nature of planned projects, and so on. But the risk capital base available to support the company's financial structure makes a central contribution, and it will be convenient to refer to a company's capital in that rôle as its *financial capacity*. The importance of capital, in the financial capacity sense, arises because it provides a buffer which cushions creditors in the event of failure—and its amplitude can in itself reduce the prospects of failure and thus aid financial stability. The utility of a DP measure as a means of maintaining financial capacity therefore involves the interests of all participants in a company's activities—and spreads beyond to the public interest, since company failures entail social costs.

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[36] This statement is not intended to enter into the longstanding question of what the stockmarket really capitalises when shares are valued. It is irrelevant for present purposes whether a current dividend enters directly into share valuation or is interpreted by investors as providing informational content on the company's future earnings and growth opportunities. See M. H. Miller and F. Modigliani, 'Dividend policy, growth and the valuation of shares', *Journal of Business*, October 1961, pp. 411–433, particularly p. 429.

[37] The classic example is J. Lintner, 'Distribution of incomes of corporations among dividends, retained earnings and taxes', *American Economic Review, Papers and Proceedings*, May 1956, pp. 97–113. See also, J. E. Walker, *Dividend Policy and Enterprise Valuation*, Wadsworth, 1967, particularly chapter 4.

[38] See P. G. Darling, 'The influence of expectations and liquidity on dividend policy', *Journal of Political Economy*, June 1957, pp. 209–24.

English case law on distributions already contains an overriding solvency requirement, quoted earlier from Gower, that dividends cannot be paid if this would result in the company's being unable to pay its debts as they fall due. Desirable as the general intentions of that requirement are, it represents a test that needs the intervention of a court of law for its interpretation. As French says:

> The precise scope of the solvency test has still, after eighty years, to be worked out by the English courts. Presumably it implies cash budgeting by the directors so that they can satisfy themselves that the estimated cash available in a future period is sufficient to meet the debts that will then fall due together with the dividend.[39]

Cash budgeting, if that is in fact required, would not in itself ensure prudent dividend decisions: sanguine directors have been known to endorse sanguine budgets.[40] The major practical effect of the solvency test may be to prevent payment of an outstanding proposed dividend when a company becomes insolvent, although the test does at least point management in the direction of prudent distributions. However, the solvency test does not apply to the mass of other financially sensitive corporate decisions—where cash budgets, sanguine or otherwise, are far from being universally employed.[41]

The Companies Act 1980 does not affect the solvency test but imposes dividend distribution restrictions for which DP is defined as follows:

> ... a company's profits available for distribution are its accumulated, realised profits so far as not previously utilised (whether by distribution, capitalisation or otherwise) less its accumulated, realised losses, so far as not previously written off.[42]

This is a strictly traditional approach to DP, apparently intended to coincide with conventional accounting profit calculated on the historical cost basis. A recommendation that the law should be amended along these lines was made in 1962 by the Jenkins Committee,[43] but the new definition is motivated neither by a sudden conversion to the Jenkins views nor by a rejection of the more recent views that capital should be maintained in ways that reflect price changes. The restriction of distributions to *accumulated* profits arose from the need to satisfy the Second EEC Directive on the harmonisation of company law,[44] while the definition of those profits as *realised* seems likely to have been influenced by both the Jenkins Report and the Fourth EEC Directive.[45] However, it must be acknowledged that the treatment of all unrealised gains as undistributable would be supported by the vast majority of the UK accounting profession. For these accountants the only point likely to be at issue is that they might prefer to see realised holding gains (or some proportion of these gains) treated as undistributable as well.

The restriction of dividends to realised profits is superficially attractive as a contribution to the maintenance of financial capacity. If gains have been realised, so the argument might run, the company has at least received the money before it is paid out again and that reduces the need to rely on the validity of asset valuations. Unfortunately, the argument has two weaknesses, one damaging and the other fatal. The first difficulty arises from the peculiarity that a profit may be considered to be 'realised' for conventional accounting purposes not only on the receipt of cash but only on the basis of contractual relationships. Sales to debtors provide the most obvious example, but attributable profits on long-term contracts and hire purchase contracts are not normally distinguished as 'unrealised'. The valuation of any of these items is hardly as reliable as cash at the bank—and moreover the cost side of realised profits also depends on valuations (via depreciation calculations). The second, and crucial, difficulty is that even when 'accumulated realised profits' really could be considered to have been received in cash, they will usually have been converted into other assets long before dividend time comes around. Indeed, the swift reconversion of cash into trading assets is entirely normal business practice, and a company management that matched its realised profits with deposits to a separate bank account would be highly eccentric. Thus the validity of accumulated realised profits is no less dependent than unrealised profits on the asset valuations in the balance sheet.

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[39] *Op. cit.*, pp. 320–321.

[40] Department of Trade investigations provide some good examples. See Department of Trade investigations under section 165(b) of the Companies Act 1948: *John Willment Automobiles Ltd*, HMSO, 1975, particularly paragraphs 400–575, and *Dwell Constructions Limited* [and other companies], HMSO, 1976, particularly Chapter 12 of Volume 1.

[41] For example, a 1974 survey of UK bank lending to companies showed that cash budgets were used in only a minority of the lending decisions. See D. A. Egginton, *Accounting for the Banker*, Longman, 1977, Tables B and D on page 264.

[42] *Companies Act*, 1980, clause 39(2).

[43] *Report of the Company Law Committee*, HMSO, Cmnd. 1749, 1962, para. 350.

[44] *Implementation of the Second EEC Directive on Company Law: An explanatory and consultative note*, Department of Trade, 1977, para. 46.

[45] 'Fourth Council Directive', *Official Journal of the European Communities*, L222, Volume 21, 14 August 1978, particularly Articles 31 and 33.

Any constraint on distributions, whether or not related to realised profit, has negligible prospects of making a contribution to the maintenance of financial capacity unless the constraint has some relevance to the relationship between the company's financial capacity and its financial commitments. It has been a long-standing absurdity that no general minimum capital requirement exists in UK company law: two shares of derisory amount are sufficient. The Companies Act 1980, again in deference to EEC requirements, requires a minimum paid-up share capital of £50,000 for public companies,[46] but private companies are unaffected. Nor is there any *general* requirement that a company's financial commitments should bear some relationship to its financial capacity.

It is unlikely that many private companies would be seriously affected by a DP constraint. Excessive directors' remuneration is a more genuine danger for small director-controlled companies than excessive dividends are. Thus, in the absence of a minimum share capital requirement, the Companies Act leaves the issue of private company financial capacity effectively untouched. Yet private companies provide the bulk of corporate failures, commonly involving much larger losses for creditors than for shareholders, and there are grounds for suspecting that undercapitalisation is a major cause of private company failures.[47]

Legal requirements that would influence companies to establish some form of relationship between their financial capacity and their financial commitments would provide a much more promising influence for prudent decisions than DP orthodoxies. There are several ways in which such requirements might operate, but one example is provided by the 1980 Companies Act itself, which provides that an investment company (a listed company managing a spread of investments for its members) may only make distributions:

> (a) if at that time the amount of its assets is at least equal to one and a half times the aggregate of its liabilities; and
> (b) if, and to the extent that, the distribution does not reduce that amount to less than one and a half times that aggregate.[48]

In effect this is a gearing limit. Shareholders' funds should be maintained above 50% of all liabilities of an investment company. If the requirement is not met, the company would not be permitted to pay a dividend. The Companies Act, following the EEC lead, imposes the limit *in addition* to making both unrealised profits and realised capital profits undistributable for this type of company—but such excessive zeal is not an essential characteristic of the general approach. Some form of broad-based gearing limit could well provide an effective influence for prudent decision making in place of a DP constraint.

An alternative approach would to be require that shareholders' funds should bear some given relationship to the volume of business transacted before a dividend can be declared. The measure of volume would have to be *ex post* (probably last year's sales), which is admittedly lenient to rapidly expanding companies. There is already a precedent on the statute book for this type of requirement: UK insurance companies carrying on general business must have a margin of solvency (effectively shareholder funds) related by a sliding scale to last year's premium income.[49] In the insurance companies legislation, however, the penalty for failure to meet the requirement is not withdrawal of the right to pay dividends but withdrawal of the authorisation to conduct business.

The insurance companies precedent raises the question of whether withdrawal of the right to pay dividends is always the best sanction for failure to maintain adequate financial capacity. The earlier argument on private company dividends clearly suggests a need for alternative approaches. Withdrawal of the right to conduct business might be considered draconian for the ordinary company, but two lesser sanctions could be applied to private companies (or even to all companies) in place of the dividend sanction. One approach would be the withdrawal of limited liability from a company that breached the financial capacity requirements, making *directors* personally liable for business debts. Another possibility would be to constrain the directors' remuneration in companies that broke the rules.

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[46] *Op. cit.*, clause 85.

[47] One sample of 100 failed private companies yielded 51 cases in which insufficient capital or working capital were regarded as important contributors to failure in the opinion of the Official Receivers. There was a share capital of £100 or less in 52 of the companies, of which 16 had estimated deficiencies of £10,000 or more. See R. Brough, 'Business failures in England and Wales', *Business Ratios*, Issue Two, Dun and Bradstreet, 1970.

[48] *Op. cit.*, clause 41(1).

[49] *Insurance Companies Act 1974*, section 4. Some delightfully open-ended variations on this theme are included in the 1979 Banking Act; for example, Schedule 2 paragraph 6(1) decrees: 'The institution... will maintain net assets which, together with other financial resources available to the institution of such a nature and amount as are considered appropriate by the Bank [of England], are of an amount which is commensurate with the scale of the institution's operations.'

The form of any financial capacity requirements would need careful examination before imposition. For example, a uniform requirement for a relationship between shareholders' funds and sales could cause difficulties; it would be likely to bear harder on, say, retailers with rapid cash turnover than on most manufacturers. But the method could be appropriate for selective use, particularly for companies where advance payments from the general public may be at risk (e.g. mail order companies and travel agencies). Alternatively companies might be given an option of complying with either a gearing limit or a sales/shareholders' funds constraint.

The validity of any measure of financial capacity must depend on the underlying asset valuation, whether the measure is to be related to financial commitments or is to be used for an orthodox DP constraint. Cost based valuations have relevance for such uses as measurement of performance of the continuing entity, but in the present context of capacity to meet financial commitments—recalling the 'buffer' argument on behalf of creditors—the acid test of financial capacity would be a realisable value asset valuation. To seek a separate asset valuation for the assessment of financial capacity may be a counsel of perfection, but there are already precedents for employing different valuation bases for different accounting purposes. In UK legislation there are special 'prudent' valuation rules for accounts prepared under the insurance company regulations,[50] and the UK profession has itself set a precedent in the direction of multiple accounting measures by presenting current cost accounting statements while retaining historical cost accounts.

Conclusion

The DP concept has emerged as ineffectual in serving the aims of prudent decision making under the three views of capital maintenance that have been examined. According to the proprietary theory, decision making should serve the interests of shareholders, but the DP constraint can merely serve as a restriction on the redeployment of the shareholders' resources. In the entity theory the central objective of aggrandisement of the entity needs and receives no assistance from a DP constraint. The area where there is evident need for prudential influence is the maintenance of financial capacity, but the orthodox DP concept makes no contribution towards ensuring that financial capacity has any relevance to financial commitments. Consequently it would seem that financial accounting theory would be healthier without the distractions of the DP concept; its demise would allow other purposes of profit measurement to receive more attention, and the objective of prudence associated with the DP concept could be more effectively pursued in other ways.

The 1980 Companies Act definition of DP as realised profits cannot provide any significant prudential influence on companies. Alternative statutory methods of encouraging financial prudence could be feasible, and the following possibilities are worthy of consideration:

1. The enactment for all companies of some minimum level of shareholders' funds relative to financial commitments. The required relationships might be based on gearing limits, sales/shareholders funds ratio or some combination of the two.
2. A possible penalty for failure to maintain financial capacity might be the withdrawal of limited liability status—a sanction that could be more appropriate for private companies than for public companies. Less rigorous sanctions would be the withdrawal of the right to pay dividends from public companies and the restriction of directors' remuneration.
3. The contentious issue of valuation might be tackled at some cost by requiring realisable values to be used in special calculations of financial capacity, or it could be the subject of compromise prudential valuation rules of the sort already in use for insurance companies. A zero-cost alternative would be provided by the adoption of generally accepted accounting methods of valuation, which would still provide a far more relevant approach to regulation of financial capacity than is available at present.

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[50] *The Insurance Companies (Valuation of Assets) Regulations 1974*, HMSO. Statutory Instrument, No. 2203, 1974.

Published Statements of Value Added: A Survey of Three Years' Experience

B. A. Rutherford

In 1975 *The Corporate Report*[1] recommended that companies should provide statements of value added as an addition to their annual reports. In his foreword to the report, the Chairman of the ASSC urged that its publication should be followed by 'discussion, comment and above all testing of the ideas it contains'.[2] It is now more than 3 years since the recommendation was made, and although it has yet to be endorsed by the profession, let alone become a standard, it has been widely followed.

This paper examines the construction of statements of value added produced by large companies during the 3 years beginning July 1975. The examination was conducted partly to discover how the problems of reporting value added were being dealt with, and partly to investigate the process of testing itself. In this context, 'testing' means, of course, the application of the general idea by *producers* of accounts to their particular situations, rather than testing by *users*. A lengthy period of such testing under conditions of flexibility (i.e. in the absence of a standard) might be valuable if it enabled those responsible for drafting standards to make observations which were not apparent from a short period of testing. A lengthy period might, for example, generate a richer variety of alternatives, or allow a particular practice to emerge more clearly as the most popular amongst producers. This paper investigates whether such trends can be discerned in the case under consideration.

Research design

The sample was based on the largest 250 companies in *The Times 1000* for 1976/77.[3] Foreign and unquoted companies were excluded from the sample, and 54 companies were eliminated for this reason; five companies did not survive the 3 year period and were eliminated from the sample entirely; one company charged for providing copies of its accounts and was also eliminated. This left 190 companies in the sample.

A statement is treated as being (or incorporating) a statement of value added (SVA) if it focusses attention on the accounting number described in *The Corporate Report* as value added. Thus statements which provide the same data as an SVA but which do not draw an explicit distinction between input costs and wages are not treated as SVAs for the purpose of this survey.

The survey covers annual reports and other material provided by companies in response to a request for their annual reports. Such material would presumably also have been circulated to shareholders. Thus an SVA included in an employee report would be covered in this survey if the report was also circulated with the accounts but not otherwise.

Where a company published more than one SVA in a year, for example in both its main report and its employee report, this survey generally uses the statement published in the main report (for example in determining the treatment of particular items) although additional information published elsewhere is also taken into account.

The accounts covered by the survey are for those periods ending in the three years from July 1975 to June 1978.[4] Although *The Corporate Report* was not published until July 1975 it is possible to construct an SVA after a year-end without much difficulty, as several companies demonstrated.

In summarising treatments and descriptions, trivial differences have been ignored.

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[1] Accounting Standards Steering Committee, *The Corporate Report* (London: ASSC, 1975).

[2] *Ibid*, p. 7.

[3] M. Allen (ed.), *The Times 1000* (London: Times Newspapers, 1976).

[4] The first year's results were reported in B. A. Rutherford, 'Examining some value added statements', *Accountancy*, July 1978, pp. 49–52.

Table 1
Incidence of statements

	Number of statements	*Proportion (N = 190)*	*Average rank of companies with SVAs*
1975/76	24	12·6	82·25
1976/77	51	26·8	83·63
1977/78	66	34·7	83·95

Incidence and structure

Incidence

Table 1 shows the incidence of statements over the 3 year period. The SVA has been one of the more popular recommendations of *The Corporate Report*, but it has certainly not been universally adopted; although the proportion of companies publishing SVAs has increased substantially, by June 1978 it had barely reached one-third. As an indication of whether there was a bias in respect of size amongst the companies in the sample which published SVAs, the average rank of such companies was calculated and the results are also shown in Table 1. By comparing this with the average rank of all companies in the sample (95.5) it is apparent that there is a slight bias towards publication by larger companies. Although this bias is being eliminated slowly as more companies publish SVAs it has been remarkably stable. The existence of a bias towards the largest companies in a sample of large companies suggests that the proportion of all companies publishing SVAs is substantially lower than the figure obtained in this survey.

The location of SVAs is given in Table 2. Most

Table 2
Location of statements

	1975/76		*1976/77*		*1977/78*	
	n	*%*	*n*	*%*	*n*	*%*
Main accounts only	22	91·6	39	76·5	53	80·3
Employee report only	1	4·2	5	9·8	5	7·6
Main accounts and employee report	1	4·2	3	5·9	4	6·1
Supplementary report (see note) only			2	3·9	1	1·5
Main accounts and supplementary report			2	3·9	3	4·5
	24	100·0	51	100·0	66	100.0

Note: That is, a report addressed to several groups, or not specifically addressed.

Table 3
Titles

	1975/76		*1976/77*		*1977/78*	
	n	*%*	*n*	*%*	*n*	*%*
Orthodox titles						
Statement of value added	6	25·0	14(note 3)	27·5	12	18·2
Other (note 1)	8	33·3	25	49·0	43	65·1
	14	58·3	39	76·5	55	83·3
Unorthodox titles (note 2)	6	25·0	7	13·7	3	4·6
Statement combined with other information	4	16·7	5	9·8	8	12·1
	24	100·0	51	100·0	66	100·0

Notes
1. For example, 'Added value statement', 'Group value added' and 'Statement of value added and its distribution'.
2. See table 4.
3. Two companies used unorthodox titles for statements contained in supplementary material.

Table 4
Unorthodox titles

1975/76	
Associated Dairies	Where the money goes
Blackwood Hodge	How the group spends the money it receives
GMH	Who benefits from our increase in sales?
OTT	Statement of use of total income
THF	Share of the operating profit cake
United Biscuits	How we created wealth and shared it out
1976/77	
Associated Dairies	As 1975/76
Blackwood Hodge	As 1975/76
Bowring	Where the money goes
Freemans	Our year's work in money terms—the 'value added' way of looking at our profit and loss account
GMH	As 1975/76
Marley	How we use our money
OTT	As 1975/76
1977/78	
GMH	Who benefits from the increases in our trading income?
OTT	As 1975/76
TI	How the sales were built up

companies publish their SVAs to shareholders in the main accounts, although in a few cases employee reports and other supplementary material were used instead of, or as well as, the main accounts.

Title

The range of titles used defies easy summarisation; however a subjective classification between orthodox and unorthodox titles was made and the results are shown in Table 3. *The Corporate Report* suggests the eminently sensible title, 'Statement of value added'.[5] Orthodox titles are those which follow the pattern of this suggestion, including those which give fuller descriptions of the statement using the terms employed in *The Corporate Report*, and those which use normal accounting embellishments. Some examples are given in note 1 to the table. Such titles have always been relatively popular and are now used by more than four-fifths of companies. The number of companies using the exact title suggested is much smaller however, and appears to be falling slightly. At least companies are not slavishly following *The Corporate Report* in its smallest detail.

The use of unorthodox titles has greatly declined. Of the three companies using such titles in 1977/78, two were repeating a practice begun 2 years earlier. Table 4 gives a list of the titles in each year which have been classified as unorthodox; some of the titles, especially those used in earlier years, are highly misleading, employing such terms as 'total income', 'operating profit' and 'money'.

Format

The formats employed for the presentation of value added are shown in Table 5. Almost all the statements provided calculations by both the subtractive and the additive methods. In the case of the subtractive method there has been a steady move towards more varied presentation, although the number of companies restricting the format to the tabular presentation suggested by *The Corporate Report* remains high; more than two-thirds of companies used this method alone in 1977/78. The additive method has always been presented in a more varied fashion, with the provision of percentages of value added allocated to different parties being the favourite variation. The proportion of companies preferring the limited tabular presentation solely increased from 1976/77 to 1977/78 but was still barely one-third.

The table reflects a considerable variety of alternative formats—indeed the variety has been compressed, for example by treating all graphic approaches as forming a single category. This variety is, of course, partly a result of a wider attempt to experiment with presentation, particularly in so-called simplified reports.

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[5] *The Corporate Report*, p. 50. This is the title given in the illustrative example; the relevant section of the report is given the title 'value added statement' (p. 49).

Table 5
Formats

	Subtractive method 1975/76	1976/77	1977/78	*Additive method* 1975/76	1976/77	1977/78
Tabular only	18	36	43	12	15	24
Tabular and % sales	1	2	6		1	1
Tabular and % value added			1	3	15	21
Tabular and graphic		4	6	3	5	7
Tabular and % change			2			
Tabular, % value added and graphic					3	2
Tabular, % value added and % change						1
Tabular, % value added, % change and graphic						1
Graphic only/graphic and narrative		4	3	3	6	3
Graphic and % sales			1	1		1
Graphic and % value added				1	3	2
Graphic and % change				1	1	1
Narrative only		1			1	
Narrative and % sales	1	1				
	20	48	62	24	50	64
Not provided	4	3	4	—	1	2
	24	51	66	24	51	66

Note: Percentages include here other methods of indicating proportion, e.g. pence per £.

Description of Value Added

Table 6 shows the terms used to describe the accounting number on which the SVAs focus attention. The description used is generally that applied to the relevant number in the statement, but where there is no description at that point, the title or commentary is used as the source. The number of companies referring to 'value added' or 'added value' amounted to three-quarters of the total in 1975/76 and has increased further since then. The number of companies using directly misleading terms (for example 'operating profit') or no description at all has always been small. The modest increase in the number of companies using 'value added' or 'added value' between 1976/77 and 1977/78 came about mainly in the form of companies preferring the form 'added value'; a small number of companies use both

Table 6
Description of value added

	1975/76 *n*	%	1976/77 *n*	%	1977/78 *n*	%
Value added	12	50·0	34	66·7	46	69·7
Wealth created or value added	3	12·4	3	5·9	2	3·0
Added value	1	4·2	4	7·8	11	16·7
Gross profit (added value)	1	4·2	1	2·0		
Value added *and* added value	1	4·2	4	7·8	3	4·5
Total using value added/added value	18	75·0	46	90·2	62	93·9
Income	1	4·2	1	2·0	1	1·5
Operating profit	1	4·2				
Profit			1	2·0		
We . . . earned	1	4·2				
What is left . . . after deducting . . . payments to suppliers . . .	1	4·2				
Wealth created					1	1.5
No description	2	8·2	3	5·8	2	3·1
	24	100.0	51	100.0	66	100.0

terms. For example in 1976 the accounts of Tate and Lyle included a statement showing 'value added', and on the following page reproduced a press advertisement referring to 'added value'. It is difficult to gauge what impression the layman receives from such inversions.

The subtractive method

The specimen SVA suggested by *The Corporate Report* shows value added calculated by two methods, the subtractive method which deducts from sales revenue the cost of inputs used in acquiring the goods sold, and the additive method which proceeds by summing the applications of value added.

Sales

In the main, the treatment and description of sales were straightforward and easy to follow, although several companies[6] switched from using the expression 'turnover' in the main accounts to 'sales' in the SVA. This was not done to comply with the recommendation of *The Corporate Report*, which uses 'turnover', but it may be because 'sales' is felt to be more easily understood. In 1976/77 one company used 'turnover' in its accounts and 'trading income' in its SVA. Some companies added various non-trading credits[7] to sales, usually indicating that they had done so. Davy International's profit and loss account adds to turnover the change in work-in-progress during the year to yield a figure for 'work done' and it is this which is used as the starting point for its calculation of value added. This does not amount to a production based measure of value added[8] since profit is still recognised on sales but it does at least avoid the need to use input cost as a sink to receive changes in the labour element of stock valuation, which is necessary in the orthodox model.[9] In 1977/78 Rothmans reported 'turnover' (excluding VAT) in its main accounts but preferred 'gross sales receipts' (including VAT) in its SVA. In a very small number of cases, companies gave an analysis of sales between segments or between home and overseas trading on the face of the SVA. With the exceptions noted above, the figures given in the SVAs agreed with the main accounts, although sometimes the SVA was rounded to a different unit.

Input Costs

The Corporate Report ascribes input costs to 'bought-in materials and services'[10] and most companies used this term or variants, making reference to, for example, 'purchases', 'supplies', 'overhead expenses' and 'sundries'. Occasionally, specific items such as rent and energy costs were mentioned. Some companies (notably brewers and cigarette manufacturers, for whom the item is particularly large) broke out indirect taxes. It has been pointed out elsewhere[11] that the need to suppress inconvenient items which would otherwise clutter up the SVA often leads to the use of the input cost entry as a kind of sink to accommodate these items. Very few SVAs provided any clue that the entry had been used in this way, although a very few gave an indication that some specific item had been included (for example, Redland described the entry as being 'net of other income') and a small number added 'etc.' to their description.

Depreciation

Depreciation was treated by *The Corporate Report* as an allocation of value added, grouped with other amounts retained in the business 'to provide for maintenance and expansion of assets'.[12] This treatment has been attacked[13] as unsatisfactory, since 'any erosion in the opening stock of wealth must be made good from value generated within the period before the balance of value *added* can be struck'.[14] However very few companies have departed from the treatment specified in *The Corporate Report*. In 1976/77 only three companies treated depreciation as an input cost, and by the following year one of those had ceased to produce an SVA, one had reverted to the orthodox treatment and one continued to treat depreciation as an input cost. Only one other statement in 1977/78 adopted this treatment.

The additive method

Description of the Method

The additive calculation of value added shows how value added has been 'applied', to use the

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[6] 1975/76: 1; 1976/77: 6; 1977/78: 7.

[7] A later section of this paper discusses non-trading credits.

[8] See B. A. Rutherford, 'Value added as a focus of attention for financial reporting: some conceptual problems', *Accounting and Business Research*, 1977, pp. 218–19.

[9] For an illustration, see M. F. Morley, *The Value Added Statement* (London: Gee & Co. for ICAS, 1978), pp. 60–61.

[10] *The Corporate Report*, p. 50.

[11] See, for example, B. A. Rutherford, *op. cit.*, 1978, p. 49.

[12] *The Corporate Report*, p. 50.

[13] For example by B. A. Rutherford, *op. cit.*, 1977, p. 219, and M. F. Morley, *op cit.*, pp. 53–60.

[14] B. A. Rutherford, *op. cit.*, 1977, p. 219.

Table 7
Description of the additive method

	1975/76		*1976/77*		*1977/78*	
	n	%	*n*	%	*n*	%
Applied/Application	11	52·4	19	43·2	23	38·3
Distributed/Distribution	3	14·3	7	15·9	13	21·6
Use/Used/Utilised	2	9·5	5	11·4	8	13·3
Shared	2	9·5	2	4·5	3	5·0
Disposal/Disposed of/Disposition	1	4·8	7	15·9	8	13·3
Expended/Spent	2	9·5	1	2·3	1	1·7
Allocated/Allocation			2	4·5	1	1·7
Disposal and utilisation			1	2·3	1	1·7
Shared or used					1	1·7
Distributed or retained					1	1·7
	21	100.0	44	100·0	60	100·0
Not applicable	3		7		6	
	24		51		66	

expression employed by *The Corporate Report*. A variety of terms was used by the companies in the sample to describe the calculation. As Table 7 shows, the largest group followed *The Corporate Report*, or used related terms such as 'application'. However the proportion of SVAs adopting these terms has declined slightly over the period and is now below one-half. 'Distribution', 'disposal' and 'use' are also moderately popular, although only the first of these was used in more than one-fifth of SVAs in 1977/78.

The rankings of the terms remained almost completely stable through the period; of the ten categories listed, only two changed ranking during the 3 years and only one ('disposal' etc.) by more than one place. The rankings were entirely stable between 1976/77 and 1977/78. Further, only one new set of expressions was coined after the first year of the survey ('allocated' etc.); the remaining new categories consist of combinations of terms already in use. Thus the second and third years of the period have yielded little information which was not available from the first year's experience.

Most of the expressions used are unexceptionable, although to describe retained profit as 'distributed' conflicts with the normal use of the term in accounting reports; and to describe depreciation, deferred taxation and retained profit as 'spent' is definitely misleading. It is difficult to judge what effect the variety of expressions in use might have on lay users comparing several SVAs.

Payroll Costs

Almost invariably the largest share of a company's value added will go to labour. Employees' take-home pay is clearly a distribution of value added but precisely what other expenditure can be included under this heading is subject to a great deal of confusion. In 1976/77 for example, 36 companies indicated that they had included pension costs in the category, and of these 13 clearly indicated that they were referring to pensions paid, 16 clearly indicated that they were referring to pension fund contributions, and in the remaining seven cases the description was ambiguous. In the same year, 15 companies made specific references to social security contributions (and equivalents) and 5 companies referred to profit-related bonuses. Other references were made to welfare, benefits, canteen costs and 'other remuneration', and several companies resorted to vague expressions such as 'related costs'. British Sugar included training costs as an allocation to employees; unless the training costs gave rise only to increased job satisfaction without any increase in productivity or wages it seems unreasonable to treat training costs as simply an allocation to employees.[15] A very small number of companies treated PAYE income tax payments (and other statutory deductions) as an allocation to government rather than employees. This is questionable in view of the normal assumption that it is the individual who bears the tax and not the company.

One way of overcoming disagreement about what should be included in this category would be to publish a breakdown of costs to permit users to make adjustments. Table 8 shows that the proportion of companies giving more than one category of cost has fallen substantially dur-

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[15] The failure of the market transaction-market valuation convention to capture some aspects of value flows is discussed in B. A. Rutherford, *op. cit.*, 1977, p. 219.

Table 8
Payroll costs

	1975/76		1976/77		1977/78	
	n	%	n	%	n	%
Number of categories of expense:						
1	15	62·5	41	80·4	56	84·9
2	6	25·0	8	15·6	6	9·1
3	2	8·3	1	2·0	3	4·5
4	1	4·2	1	2·0	1	1·5
	24	100.0	51	100.0	66	100.0

ing the period. *The Corporate Report* showed only one category; the reversion to this practice, ironically, involves a reduction in the amount of information published.[16]

Interest and Dividends

The major point of confusion in the treatment of interest was whether interest receivable should be netted against interest payable or included elsewhere. The treatment of interest receivable is discussed in a later section. In some cases the description of interest as an application was misleading as to whether the amount was the gross sum payable or a net figure. Bass Charrington, for example, in 1977/78 included the 'cost of borrowing' as an application 'to providers of capital' without giving any indication that the amount had been reduced by 34% by interest receivable and a redemption surplus.

A small number of companies[17] treated interest payable as an input cost; this directly contradicts the notion of value added adopted by *The Corporate Report*. In addition two companies in 1976/77 and three in 1977/78 included only long-term interest as an application of value added, treating short-term interest as an input cost. Also, in 1977/78 two companies had interest receivable which exceeded interest payable and treated the net amount as a non-trading credit, thereby effectively reducing the value added available for distribution by the amount of interest payable.

Dividends were treated in a straightforward manner. In 1977/78 two companies included a total profit figure in the applications of value added, thus removing the distinction between dividends and retained profit. Interestingly, Thomas Tilling included a footnote explaining how the increase in dividends had come about, although no explanation of the changes in the other items in the statement was offered.

Finally, Distillers included exchange gains and losses on loans in the application of value added to providers of capital in 1977/78.

Taxation

Most companies described taxation in simple terms, although deferred taxation was often dealt with misleadingly. Table 9 shows the treatment of deferred taxation in 1976/77. Over half the companies in the sample clearly implied that deferred taxation represented an application of value added to the state, although of course there is actually no transfer nor (since the survey took place prior to the implementation of SSAP 15) was there necessarily likely to be a transfer in the forseeable future. Some companies described deferred taxation in neutral terms, although it seems unlikely that a layman would appreciate from this that the resources represented by value added had in fact been retained within the entity. Only three companies included deferred taxation with retentions.

It has been argued that all taxation that arises directly out of the company's own activities (including capital taxes, local rates and taxes and indirect taxation) should be included in the application of value added to the state,[18] but in practice very few companies included anything other than the consolidated profits taxation shown in the main accounts. The following items were included in statements in 1976/77:

EEC refund (British Sugar)
Other taxes (Bunzl)
Taxes payable to central and local govern-

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[16] Other allocations of value added were rarely broken down below the level of aggregation recommended in *The Corporate Report*.

[17] 1975/76: 2; 1976/77: 6; 1977/78: 4.

[18] For example by B. A. Rutherford, *op. cit.*, 1977, pp. 219–20. For an opposite point of view, see M. F. Morley, *op. cit.*, pp. 78–85.

Table 9
Treatment of deferred taxation in 1976/77

	n
Included with taxation payable by companies describing taxation as applied to government (and equivalents)	27
Shown separately but described as applied to government	1
Included with taxation described neutrally	11
Shown separately and described neutrally	1
Included with retentions	3
Insufficient data/not applicable	8
	51

Table 10
Treatment of minority interests (*note 1*)

	1975/76		*1976/77*		*1977/78*	
	n	%	*n*	%	*n*	%
Total MI shown as a separate application	7	43·8	17	48·6	25	56·8
MI dividends and retentions included with group allocations	5	31·2	10	28·6	12	27·3
Total MI included with dividends (note 2)			2	5·7	1	2·3
Total MI included with retentions (note 2)	2	12·5	2	5·7	2	4·5
MI included in input costs	2	12·5	4	11·4	4	9·1
	16	100.0	35	100.0	44	100.0

Notes
1. Minority interests are included in this table only if they are significant and their treatment can be determined.
2. Total MI may, of course, be entirely of this nature.

ments (Davy International)
Corporate taxes, less grants (ICI)
Corporate taxes, rates, betting duty etc., less grants received (Sears)
Local rates (600 Group).

Minority Interests

The Corporate Report does not discuss how minority interests should be treated. The treatment which corresponds most closely to the approach adopted for the group's profit is to separate the minority dividends and retentions and include each with the related group applications. As Table 10 shows, this approach was adopted by 31% of companies in the first year's sample and this proportion remained remarkably stable over the three year period. However, the most popular treatment in the first year was to show minority interests as a separate application and this remained the most popular throughout the period. Again, very little additional information of value to anyone attempting to draft a standard emerged after the first year. A small number of companies included minority interests with input costs; even though the amounts involved may not be material, the impression given to a layman who finds out that this treatment has been adopted may be unsatisfactory.

Retentions

It has already been suggested that depreciation should not be included under this heading at all; wherever it is included, its description requires care. The attempt to simplify accounting reports and make them easily understandable for laymen must not be allowed to result in misleading and erroneous terminology. It is therefore disturbing to encounter descriptions of depreciation in these terms:

> 'Depreciation to provide for replacement of buildings, plant and equipment' (Allied Breweries Accounts 1977/78).
> 'Depreciation for replacement of assets' (Blackwood Hodge Accounts 1977/78).

> 'The cost of replacing machinery that is wearing out' (D.R.G. Employee Report 1977/78).
> 'Money... set aside towards their eventual replacement' (Northern Foods Employee Report 1977/78).
> '... depreciation to help pay for new plant and equipment...' (T.I. Employee Report 1977/78).
> 'Depreciation: the amount which is set aside out of profits towards the cost of the eventual replacement of machinery, vehicles and plant' (Unigate Employee Report 1977/78).

More common than the misleading definition of depreciation was the grouping of depreciation with other retentions in a misleading way. *The Corporate Report* describes depreciation and retained profits as being retained 'to provide for maintenance and expansion of assets'.[19] Viewed as an interpretation of the accounting equation this is, of course, correct, but it might give a false impression to laymen who might, for example, believe that depreciation of fixed assets had been used to maintain those assets. Some phrases in use, though they may appear at first sight to be simply variants of the original, are not so easy to defend. Tate and Lyle, for example, describe the combination of retained profit and depreciation as being applied 'to provide investment for growth'.

The format employed in *The Corporate Report* entirely divorces retentions from applications to shareholders. This clearly does not reflect traditional views of retained profit. Apart from the couple of companies in 1977/78 which showed profit before dividends in the statement, only one company reflected this traditional view by reporting as retained in the business, 'profits, which increase the net worth of the company'.

Non-trading credits

Perhaps the most widespread source of difficulty in the construction of SVAs is the presence of non-trading credits, that is to say, sources of revenue which do not arise out of a company's own manufacturing and trading activities. Such sources usually represent applications of some other entity's value added, and their treatment requires care if the resulting SVA is not to be misleading.[20] Table 11 shows the methods adopted for the treatment of three major non-trading credits, namely the results of associated companies, interest receivable and other investment income.

The treatments available for non-trading credits include:[21]

1. Understatement of input costs. If it is accepted that non-trading credits do not represent the organisation's own value added, this treatment effectively overstates value added.
2. Presentation as a separately disclosed addition to value added calculated by the subtractive method.
3. Netting against an application of value added. If it is accepted that non-trading credits do not represent the organisation's own value added, this measure yields a proper measure of the organisation's value added, but understates the total value added available for application by understating the application in question.
4. Presentation as a separately disclosed deduction from value added calculated by the additive method.
5. Elimination from the statement entirely. This treatment poses the problem of determining what application is to be matched with the credit as having arisen 'outside' the SVA, so that the amount of the application included in the SVA is reduced; the solution is invariably retained profit.

Methods 4 and 5 were used only for associated companies, and then very rarely. Method 5 was in fact used by only one company, although it is interesting that this treatment emerged only in the third year of the survey. Methods 1 to 3 were employed by significant numbers of companies for each type of credit; method 3 was particularly popular in the case of interest receivable, probably because of the existence of a particularly plausible application against which it could be netted.

Morley[22] recommends the use of method 2. For both associated companies' results and investment income this method was already substantially the most popular in the first year of the survey and it became more popular over time, although only to a modest degree. In the case of interest receivable, method 3 was initially and remained the most popular, although it lost some ground to method 2. Overall, the popularity of the various methods was, again, surprisingly stable: disregarding the late appearance of the one example of method 5, all methods are ranked in the same order for each case throughout the period.

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[19] *The Corporate Report*, p. 50.

[20] See M. F. Morley, *op. cit.*, pp. 64–68 and B. A. Rutherford, *op. cit.*, 1977, pp. 217–18.

[21] For an illustration of the effects of these treatments, see B. A. Rutherford, *op. cit.*, 1978, p. 49.

[22] M. F. Morley, *op. cit.*, p. 68.

Table 11
Treatment of non-trading credits

		1975/76		1976/77		1977/78	
		n	%	*n*	%	*n*	%
	Method used (see note)						
(i)	Associated companies' results						
	Method 1	2	15·4	10	34·5	7	17·1
	Method 2	8	61·5	17	58·6	31	75·6
	Method 3	1	7·7				
	Method 4	2	15·4	2	6·9	2	4·9
	Method 5					1	2·4
		13	100.0	29	100.0	41	100.0
(ii)	Interest receivable						
	Method 1	1	5·5	1	2·7	5	10.0
	Method 2	5	27·8	13	35·1	18	36·0
	Method 3	12	66.7	23	62·2	27	54·0
		18	100.0	37	100.0	50	100·0
(iii)	Other investment income						
	Method 1	4	28·6	5	16·1	12	28·6
	Method 2	7	50·0	21	67·8	24	57·1
	Method 3	3	21.4	5	16·1	6	14·3
		14	100.0	31	100.0	42	100·0
	Levels of results of associates incorporated						
	Sales and input costs			1	3·4	2	5·0
	Share of results	10	76·9	24	82·8	32	80·0
	Dividends only	3	23.1	4	13·8	6	15·0
		13	100·0	29	100.0	40	100·0
	Consistency						
	Number of companies with more than one non-trading credit	15		34		48	
	Number of companies treating all non-trading credits consistently	7		14		23	
	Percentage of total		46·7		41·2		47·9

Note: For explanation of the methods, see the text.

It is possible to include the results of associated companies at various levels. Four-fifths of the companies in the sample followed the treatment established by SSAP 1 for the profit and loss account and this proportion is also stable. The use of associates' sales and input costs emerged in the second year and has not become popular.

The final section of Table 11 shows the proportion of companies which had more than one non-trading credit and which treated them consistently. The proportion is stable but, unfortunately, has never exceeded one-half.

Method 2 yields two aggregates from the subtractive calculation: a subtotal showing value added by the activities of the organisation, and a larger total value added available for application. Morley has pointed out that when using this method it is important that 'the descriptions of the subtotal and the total are judiciously worded in order accurately to reflect *who* has added the value'.[23] Table 12 shows the descriptions used in practice. Although the total in question is most frequently given no description at all, it is often described in terms which obscure the status of the non-trading credits, or which may cause confusion with other concepts, for example income and funds.

Extraordinary items

The Corporate Report recognised that 'the presentation of value added statements involves overcoming many of the problems also associated with the presentation of profit and loss accounts, for example the treatment of extraordinary profits and losses'.[24] This was perhaps to underestimate

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[23] *Ibid*, p. 66.

[24] *The Corporate Report*, p. 50.

Table 12

Description of value added calculated by the subtractive method where there are non-trading credits

	1975/76 *n*	*1976/77* *n*	*1977/78* *n*
Description of the sub-total			
Not struck or anonymous	5	10	11
Of which: credit added to sales	3	6	7
Value added/added value	3	8	10
Wealth created or value added	1		
Income from trading	1		
Value added by trading/manufacturing/etc		4	10
Value added by ourselves		1	
Value added by group employees			1
Value added to products			1
	10	23	33
Description of the total			
Anonymous	2	5	10
Value added/added value	3	6	5
Wealth created or value added	2	1	1
Total funds available for allocation	1	1	
Total value	1	2	3
Total income	1	2	2
Total value added/total added value		3	7
Available for application		1	1
Total to be distributed		1	1
Total available for allocation		1	2
Total wealth created			1
	10	23	33

the problems of dealing with extraordinary items, because in determining the treatment of such items in the profit and loss account what counts is presumably the relationship between the items and the shareholders, whereas in drawing up an SVA, account must be taken of the more complex set of relationships between the entity and the various groups represented therein. For example, the following items all represent losses to the shareholders and are therefore correctly deducted from profit at some point in the accounts:

(a) Costs of fire damage not covered by insurance.

(b) Assets appropriated by foreign powers.

(c) Redundancy payments on closure of part of the business.

(d) Losses on disposal of fixed assets.

However each item may have a different impact on value added. The first represents an unrequited loss to society and should perhaps be regarded as a reduction in the net value 'added' by the firm, although possibly shown separately from the value added by normal operations. The second represents a reduction in the resources available to members of society usually shown as having a claim on value added, but not to society as a whole; perhaps it is an 'enforced' application. The third is an application of value added to members of society who were in the labour force during the period, although it is not normally regarded as a reward for their efforts in generating value added. The fourth is clearly a loss of value to the entity but is not a loss of resources to society and might perhaps therefore be regarded as a reallocation of value between shareholders and other owners of assets.

In the face of this diversity, Morley concludes that 'the best treatment of an extraordinary credit depends on the nature of the income or gain and whether value can be said to be added by it. The same applies to extraordinary losses.'[25] The diversity, and the difficulty of determining the nature vis-à-vis value added of some items from their descriptions in the accounts, makes it very difficult to summarise the approaches adopted by the companies in the sample. Table 13 makes an attempt to summarise the treatments used by companies providing sufficient data in their SVAs for 1976/77 only. Even making due allowance for the possibility that the groups of items listed com-

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[25] M. F. Morley, *op. cit.*, p. 87.

Table 13
Treatment of particular extraordinary items in 1976/77 (note 1)

	Included in input costs	*Excluded from statement (note 2)*	*Included in NTCs added to value added*	*Separate application of value added*	*Total*
Profit/loss on sale/ revaluation/termination of business/subsidiary (including reorganisation expenses)	9	1	1	4	15
Profit/loss on translation	6	2	1	1	10
Profit/loss on sale/ revaluation of investments	4	2	1	1	8
Profit/loss on sale/ revaluation of property	1	3	2		6
Goodwill adjustments	2	1	2		5
Profit on redemption of debentures	2	1	1		4
Additional pension costs	1	2			3
Profit/loss on sale/ revaluation of fixed assets	1	1			2
Deferred taxation adjustments		2			2
Expenses of new issues	1		1		2
Acquisition of trade marks		1			1

Notes
1 Excluding cases where insufficient data was given, for example where rounding in the SVA eliminated the item.
2 By adjustment of retained profit.

bine items of differing natures, and taking into account the operation of materiality, it is hard to escape an impression of confusion and inconsistency.

The most popular treatment is to include items in input costs. It is impossible to say whether a particular company adopts this treatment because it is felt that the economic significance of the item makes it appropriate, or because the item is regarded as immaterial, or because the input cost heading is being used as a 'sink'. Certainly extraordinary items will nearly always be immaterial by comparison with total input costs, but this may not be the fair test. For example, Reed had extraordinary charges amounting to £7.3 million and these appear to have been added to input costs. The largest item was a write-down on goodwill. Compared to total input costs of £1021.4 million, or value added of £487.0 million, the items are clearly immaterial. However, a popular treatment was effectively to exclude extraordinary items from the SVA by 'writing them back' to retained profit. In Reed's case this would certainly have had a material effect since retained profit would have been more than doubled. Interestingly, Reed shows some non-trading credits separately in its subtractive calculation and the extraordinary charge is larger than the smallest non-trading credit separately disclosed. Reckitt and Colman excluded extraordinary items from their SVA and reduced retained profit by some 22%. This treatment was explicitly disclosed, but in view of the sensitivity of the retained profit item in the SVA it is unfortunate that companies are adopting widely differing policies.

Other matters

A few companies provided some narrative explanation of the meaning of value added and its distribution, generally following the pattern adopted in *The Corporate Report*. Not surprisingly, explanatory material of this sort was more common when the statement was included in a 'popular' version of the accounts, whether addressed specifically to employees or not. In all, some 14 companies (21%) gave some explanation of the meaning of value added in 1977/78; in the main the statement appeared for the first time in a

Table 14
Audit coverage

	1975/76	*1976/77*	*1977/78*
Number of statements audited	2	5	6
Of which: statements incorporated in funds statements		2	3
Audited statements as a percentage of all statements included in main accounts	8·7%	11·4%	10·0%
Excluding statements incorporated in funds statements	8·7%	7·1%	5·3%

company's accounts without any explanation of its meaning or why it was being reported.

Again, a very small number of companies gave an explanation of the treatment of particular items (for example associated companies' results and extraordinary items), and two companies provided reconciliations of value added to profit before taxation. In view of the many possible causes of difference between figures in the SVA and related figures in the main accounts, it is important that some means of tracing figures from one to the other should be provided. In particular, retained profit, which may be adjusted because of the effects of, *inter alia*, extraordinary items, associated companies, minority interests and deferred taxation, should be reconciled to the main accounts.

Some companies reported value added ratios. The most popular ratio was value added per employee. In 1977/78 this ratio was reported by four companies and one other reported value added per pound of wages. In addition one company reported value added as a return on assets employed, and one also reported sales, payroll costs, wages and salaries, retentions and depreciation per employee. A high and increasing proportion of companies provided comparatives (89% in 1977/78), and Cadbury Schweppes broke out UK operations.

Morley felt that 'there is much to be said for requiring the auditor's report to include an opinion on the value added statement....'[26] In practice very few accounts do provide an audit opinion on the SVA. When disregarding those SVAs which are incorporated in funds statements and which are therefore required to be audited, the proportion is smaller and declining, as Table 14 shows.

Finally, in 1977/78 two companies actually respected the title of the statement by reporting measures based on current *values*. Both used the Hyde guidelines as a framework for calculating the figures. Bowater showed value added gross of depreciation but then deducted depreciation from the measure to show 'wealth created'; Grattan showed value added without deducting depreciation. In Bowater's case the gearing adjustment derived from net monetary liabilities and was shown as a separate restriction of value added by the additive calculation; Grattan made a working capital adjustment based on net assets and this was included as an application of value added retained in the business.

Conclusions

It is difficult to capture systematically the degree of variety present in the construction of SVAs. This is partly because the contemporary mood is one of experimentation generally, including for example the introduction of employee reports and current values, and partly because of the difficulty of determining cut-off points in any classification scheme. An attempt has been made, however, to measure some dimensions of variety.

The publication of SVAs was mooted over three years ago and since then disclosure has taken place without formal guidance. This has resulted in a good deal of misleading and confused reporting; this may have been inevitable during a period of experimentation, but it is particularly unfortunate in view of the apparent desire that the SVA should be read by a wide audience as 'the simplest and most immediate way of putting profit into proper perspective.'[27] Simplicity obtained by the sacrifice of principle and audit is unlikely to produce confidence amongst such an audience. The application of materiality must be considered in the context of the likely readers of the statement. In view of the innovatory nature of the SVA it is perhaps surprising that greater efforts were not made to explain the statement, at least in the first year of publication.

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[26] *Ibid*, p. 112.

[27] *The Corporate Report*, p. 49.

At the beginning of this paper it was suggested that a protracted period of testing for accounting innovations could be justified if it yielded a richer variety of alternative treatments or allowed one 'preferred' alternative to emerge more clearly than in a short period.[28] In the case of the SVA, the extended period of experimentation has not yielded a substantially richer variety of treatments than was present in the first year, despite the very large increase in the number of statements published. Typically, a particular treatment predominated in the first year, and this predominance was generally neither overturned nor greatly enhanced in subsequent years. Terminology and presentation were the subject of much greater experimentation than treatment. Attempts in the literature to press the case for changes in treatment (for example, of depreciation and the timing of recognition of value added) have not been greeted with very much enthusiasm. In short, the evidence examined in this paper does not support the case for an extended trial of innovations in financial reporting.

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[28] Not that it is suggested that popularity should be the predominant criterion in making a selection.

Walter Taplin Prize

The Association of University Teachers of Accounting, the Council of Departments of Accounting Studies and *Accounting and Business Research* offer a prize of £75 for the best article published in each annual volume. The prize is named in honour of the journal's founding editor, Walter Taplin.

Subscribers to *Accounting and Business Research* are invited to nominate the best article for 1979/80 (issues 37, 37A, 38, 39 and 40). Nominations should be sent to The Editor, *Accounting and Business Research*, Amory Building, Rennes Drive, Exeter EX4 4RJ, England, to reach him not later than 30 April 1981.

Forthcoming Conferences

The next Conference of the *Association of University Teachers of Accounting* will be held at the University of Dundee on April 6–9, 1981. Professor J. R. Grinyer, Department of Accountancy, University of Dundee, Dundee, Tayside will be pleased to receive offers of papers. Price reductions may be available on British Rail.

The next Conference of the *European Accounting Association* will be held at the Instituto de Estudios Superiores de la Empresa (IESE), Barcelona on April 13–15, 1981.

The Relationship Between Relevance and Reliability: Some Empirical Results

Keith G. Stanga

The primary purpose of external financial reporting is to provide information that is useful in the making of economic decisions. Given this utilitarian objective, it is not surprising that several major attempts have been made, within both the United States and the United Kingdom, to delineate the qualitative characteristics that are determinants of information usefulness.[1] In general, these studies have resulted in similar listings of qualitative criteria.[2]

Throughout these studies, the concept of relevance appears to have emerged as the primary qualitative characteristic of useful accounting information. Relevance is regarded as a necessary but not a sufficient condition for usefulness. Unfortunately, some definitions of the relevance concept appear vague and difficult to operationalise whereas others tend to make it synonymous with usefulness itself [4, p. 16]. To help overcome these problems, a recent committee of the American Accounting Association described relevance in the following terms: 'Information about an attribute of an object or event is relevant to a decision if knowledge of that attribute can help the decision maker determine alternative courses of action or to evaluate the outcome of an alternative course of action' [4, p. 13]. For example, it is commonly thought that the historical cost of plant assets is a relevant information item to users of financial statements whereas the serial numbers associated with these plant assets is not.

A second major qualitative characteristic of useful accounting information is reliability. Like relevance, reliability is viewed as a necessary but not a sufficient condition for usefulness. The AAA committee referred to above [4, p. 16] stated that 'reliability is that quality which permits users of data to depend upon it with confidence as representative of what it purports to represent'.

The Financial Accounting Standards Board in the United States has recently suggested that relevance and reliability are the two most important qualitative characteristics of external accounting information. In its initial Proposed Statement of Financial Accounting Concepts, the FASB stated that:

> Relevance and reliability are probably the most fundamental—and the most general or abstract—of the qualitative characteristics commonly described, and most of the other characteristics can probably be related to one or the other. For example, timeliness, comparability, materiality, substance over form, and similar characteristics contribute toward the relevance of information, while objectivity, verifiability, neutrality, freedom from bias, and similar characteristics contribute toward the reliability of information [11, p. 31].

Moreover, the FASB [11, p. 31] argued that 'both relevance and reliability are so fundamental that at least a minimal level of each is essential if information is to be useful.' Thus, relevance and reliability appear to be prime determinants of usefulness.

Based on *a priori* analysis, many accountants have reasoned that the various qualitative characteristics may involve conflicts and trade-offs [see, for example, 10, pp. 163–166]. In the case of relevance and reliability, increases in the relevance of accounting information might possibly be attained at the cost of decreases in reliability. Similarly, increases in reliability may be associated with decreases in relevance. For example, depreciation expense based on the current replacement cost of plant and equipment may be a highly relevant but relatively unreliable figure to users of financial statements. In contrast, depreciation expense based on the historical cost of plant and equipment may not be relevant but may be highly reliable.

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[1] See, for example, [1], [2], [3], [4], [6] and [10].

[2] Qualitative characteristics that have been cited include relevance, verifiability, freedom from bias, quantifiability, understandability, neutrality, timeliness, comparability, completeness, materiality, substance over form, reliability, consistency and measurability.

In its *Conceptual Framework Study* the FASB stated that 'the matter of trade-offs is *at the center* of providing useful financial statement information...' (emphasis added) [10, p. 147]. Furthermore, the FASB [10, p. 164] asserted that '*recurring evaluations of the soundness of common trade-offs is needed, and some that have long been taken for granted may be among those most needing re-evaluation*' (emphasis added). Given the importance of the relevance-reliability relationship and the fact that no empirical research in this area can be located, a need for empirical inquiry clearly exists. Accordingly, the objective of the study reported in this paper is to provide initial empirical evidence regarding the nature of the relationship, if any, that exists between the financial accounting concepts of relevance and reliability. The study is based on a survey of two of the major groups that use external accounting information, and the null hypothesis tested is that there is no relationship between relevance and reliability.

Research design

The Questionnaire

Data for the study were gathered by means of a pretested questionnaire that was completed by a sample of chartered financial analysts (CFAs) and commercial bank loan officers. (A copy of the questionnaire sent to CFAs appears in the Appendix. A very similar questionnaire was sent to bankers.) In designing the questionnaire, one objective was to conceal the fact that the relevance-reliability *relationship* was under investigation. If either the cover letter or the instructions contained a reference to the nature of this relationship, this reference could seriously bias the survey results. That is, it could cause some, and perhaps many, respondents to complete the questionnaire by relying solely on prior convictions concerning the relationship that 'ought' to exist. Therefore, the questionnaire was designed by focusing on a set of information items that are of current interest to the potential survey participants. In relation to this set of information items, the respondents were simply asked to formulate their relevance and reliability judgments. By using this approach, the cover letter and the instructions could be structured to emphasise the critical financial reporting issues to which the individual information items relate; no mention of the relevance-reliability *relationship* was necessary.

A total of thirty information items comprised the final form of the survey instrument. These items were divided between four contemporary financial reporting issues in the following manner:

Financial Reporting Issue	*Number of Questionnaire Items*
Replacement cost versus historical cost accounting	10
Segment reporting	10
Financial forecasting	4
Interim reporting	6
Total	30

These issues were chosen for the following reasons:

1. Each issue has generated considerable discussion and debate in the financial community in recent years. Thus, these issues appeared to have the potential to elicit a wide range of questionnaire responses and also perhaps to stimulate interest in completing the questionnaire.
2. Each issue can be translated into a representative set of comprehensible disclosure items. Many other contemporary financial reporting issues (e.g., accounting for leases) are not as inherently conducive to questionnaire treatment, primarily because of the highly technical terminology involved.
3. In past years at least *certain* firms have reported information items in the foregoing categories. Therefore, the respondents would be likely to have at least a minimal level of familiarity with these items and would thus be more capable of meaningfully evaluating their relevance and reliability.

Beside each of the thirty information items were *two* scales that respondents were asked to use in evaluating each item based on the dual criteria of relevance and reliability. A carefully-worded page of instructions defined these criteria as follows:[3]

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[3] The relevance and reliability definitions used in the questionnaire instructions are based on the recent AAA *Statement on Accounting Theory and Theory Acceptance* [see 4, p. 13 and p. 16].

1. *Relevance*—Information is relevant to your decision if it can help you to determine alternative courses of action or to evaluate the outcome of an alternative course of action.
2. *Reliability*—Information is reliable when you can depend on it with confidence as representative of whatever it claims to represent.

Each respondent was requested 'to evaluate *each* information item independently and circle the response on *each* of the two scales that best represents your *personal opinion* concerning the relevance and reliability *to you* of each information item.' The two scales were constructed as follows:

Relevance	*Reliability*
1 = Very relevant	1 = Very reliable
2 = Slightly relevant	2 = Slightly reliable
3 = Neither relevant nor irrelevant	3 = Neither reliable nor unreliable
4 = Slightly irrelevant	4 = Slightly unreliable
5 = Very irrelevant	5 = Very unreliable

To provide a concrete and familiar framework within which respondents could formulate their relevance and reliability judgments, the analysts were instructed to 'evaluate each information item within the context of your making a typical decision to buy, sell, or hold a small (noncontrolling) number of common shares in a *publicly-held industrial* company'. Similarly, the bankers were instructed to 'evaluate each information item within the context of your making a typical decision to extend a term loan (maturity between 3 and 5 years) of moderate size to a *publicly-held industrial* company'.

Twenty-four of the 30 questionnaire items were annual in nature, while the remaining six were quarterly. To provide a definite reporting context for the individual items, the respondents were asked to assume that the annual items had been obtained from an annual report to shareholders or a 10-K report filed with the SEC. In addition, they were asked to assume that the quarterly items had been obtained from a quarterly report to shareholders or a 10-Q report filed with the SEC.[4]

The Survey Subjects

In May, 1978, 500 CFAs and 500 chief commercial lending officers were contacted by first-class mail and asked to participate in the study. Each person contacted was sent a packet containing an introductory cover letter, a page of detailed instructions, a copy of the questionnaire, and a postage-paid, self-addressed return envelope.

The financial analysts were selected at random from the 1978 national membership directory of the Financial Analysts Federation. In order to ensure that each person polled had satisfied certain minimum education, experience and examination standards, the random selection procedure was confined to those analysts who had earned the CFA designation. Moreover, analysts in the following categories were omitted from selection: (1) retired members of the FAF, (2) members with academic affiliations, (3) bond specialists, (4) technicians, and (5) members of Canadian chapters. These restrictions of the analyst population were considered necessary to produce a sample of persons who were more likely to be actively involved in evaluating the merits of equity investments and who have a common frame of reference regarding financial accounting information in the United States.

The bankers surveyed were the chief commercial loan officers at each of the 500 largest commercial banks in the United States based on deposits as of December 31, 1977. These banks were identified in the March 27, 1978 issue of *American Banker*. The sample was limited to large banks in order to increase the probability that the loan officers surveyed would rely, to at least some extent, on the types of information included in the questionnaire when making their lending decisions. Lending officers at small banks typically depend more heavily on personal knowledge of a loan applicant rather than on the applicant's published accounting information (which often does not even exist) when making their lending recommendations [see 7, p. 38].

A total of 101 usable responses was received from the analysts contacted (20.2%) and 113 usable responses were received from the bankers (22.6%). On the positive side, these figures constitute a fairly large *number* of questionnaire respondents. However, as is true of almost every survey reported in the accounting literature, the rate of response is considerably less than 100%. This fact raises a legitimate question as to whether or not the responses received are truly representative of the populations surveyed. To help answer this question, the problem of nonresponse bias is considered.

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[4] The 10-K is an annual report and the 10-Q is a quarterly report that publicly-held companies in the USA file with the Securities and Exchange Commission.

Consideration of Nonresponse Bias

The problem of nonresponse bias is a potentially serious one when using mailed questionnaires. When a material nonresponse bias is present in a questionnaire survey, the responses received are not representative of the population under study. Thus, inferences drawn about the population based on sample statistics may be specious. As a result, survey conclusions must be confined to the responses received.

To test for the existence of nonresponse bias in this study, various alternative approaches were subjectively evaluated within a cost-benefit framework. The approach chosen involved selecting a random sample of fifteen nonrespondents from within *each* survey group. Eight weeks after the initial mailing, each of the selected individuals was mailed a packet containing a personal letter with a strong appeal for participation in the study, a second copy of the instructions sheet and the questionnaire, and a postage-paid, self-addressed return envelope. To emphasise the importance of each person's participation, each packet was sent by *certified mail*, and this fact was mentioned in the cover letter. Thus, each respondent had to sign a postal document acknowledging receipt of the mailing. This procedure generated 11 responses from the analysts and 10 responses from the bankers.[5]

The responses resulting from the nonrespondent procedure were compared statistically within each respondent group with equal numbers of randomly selected returns from the first 4 days. The reason for comparing the nonrespondents' replies with a random sample of *early* returns was to provide a conservative test for the existence of nonresponse bias, for it can be argued that late returns tend to be somewhat similar to returns of nonrespondents anyway. Oppenheim [20, p. 34], for example, has stated that 'it has been found that respondents who send in their questionnaires very late are roughly similar to nonrespondents.'

The comparison was made using Mann-Whitney U tests performed on each of the 60 questionnaire variables for relevance and reliability. The Mann-Whitney U test is a powerful nonparametric test that is appropriate when at least ordinal measurement has been achieved. It is used to test the null hypothesis that two samples (in this case, early respondents versus nonrespondents) were drawn from the same population versus the alternative hypothesis that the samples were drawn from different populations [see 22, p. 116].

Since there are two respondent groups and 60 research variables within each group, a total of 120 U tests were performed. Using an alpha level of 0.05, one might expect that approximately three (5% × 60) of the tests would be significant within each group as a result of chance. If the number of statistically significant tests within a given group was substantially greater than three, this might be construed as evidence supporting the existence of nonresponse bias. In fact, only one of the 60 tests within the banker group and three of the 60 tests within the analyst group were significant at the 0.05 level. Thus, the evidence does not suggest that a material nonresponse bias is incorporated in the research results.

Statistical Methodology

Given the nature of the study, nonparametric statistical techniques are appropriate for analysing the questionnaire responses. Ordinal scales were used in measuring the relevance and reliability variables. The two most widely-used nonparametric correlation measures that are appropriate for this level of measurement are the Spearman Rank Correlation Coefficient (r_s) and the Kendall Tau Coefficient (τ). In comparing these coefficients, Hays [14, p. 797] has stated that 'the big argument in favor of the use of τ in the test of the hypothesis of independence is the fairly rapid convergence of its sampling distribution to a normal form, as opposed to the somewhat slower convergence and other peculiarities of the distribution of r_s.' Moreover, Glass and Stanley [13, p. 178] have observed that:

> Kendall's τ has an interesting interpretation for which there is nothing comparable in the case of r_s. If two persons are drawn at random (by chance) from the group of *n*, the difference between the probability that they will have the same order on both X and Y and the probability that they will have different orders on X and Y is equal to the value of τ. Mathematical statisticians find this a particularly pleasing property for such a coefficient to have.... They tend to prefer τ to r_s on these grounds and on the grounds that it is somewhat easier to work with in the realms of inferential statistics. Computational ease and historical precedent constitute the weak case that can be made for use of r_s.

In light of the foregoing observations, a decision was made to use Kendall's tau, corrected for tied ranks, in this study. However, the reader should be aware that the author has confirmed that the conclusions reached in the paper would not be altered if r_s were used instead of τ.

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[5] These responses are, of course, included among the usable responses reported in the previous section.

Research findings

Results

Table 1 presents the average relevance and reliability values as well as the tau coefficients and their respective levels of significance for each of the 30 information items. Because the value of tau can potentially vary from -1 (perfect negative correlation) to $+1$ (perfect positive correlation), the most striking feature in the table is that *all* of the tau coefficients are positive. The coefficients for the analysts range from 0.1585 to 0.5714, and the median is 0.3347. For the bankers the coefficients range from 0.1842 to 0.5412, and the median is 0.3192. These numbers tend to indicate that a positive correlation of moderate size exists between the relevance and reliability variables. The argument for a positive association is strengthened by the small probabilities of obtaining the computed tau values solely by chance. Fifty-eight of the sixty tau coefficients are statistically significant at the 0.019 level or less, based on two-tailed tests of the null hypothesis of no association.

An ordered contingency table summarizing *all* relevance and reliability responses over the 30 information items is shown in Table 2. A Kendall's tau coefficient of 0.3404, significant at the 0.0001 level, was computed from the table. The value of τ computed from this contingency table measures the association between relevance and reliability for the entire collection of responses [see 16, pp. 45–48]. Thus, further evidence of a positive relationship of moderate size between the relevance and reliability variables is offered.

Finally, a Kendall's tau coefficient was computed for each group as a measure of the degree of association between the rankings that are suggested by the mean relevance and the mean reliability values reported in Table 1. Here a τ value of 0.1938 was calculated for the analysts and 0.3191 was computed for the bankers, once again suggesting positive correlation of moderate amount.

Discussion of Results and Limitations

The results suggest that the financial accounting concepts of relevance and reliability are complementary rather than conflicting in nature. That is, increases in relevance tend to be associated with increases in reliability and vice versa. Unfortunately, no known empirical studies can be cited to corroborate the relevance-reliability relationship found in this investigation. However, the results reported herein are consistent with those reported in a somewhat related study by Morton. Specifically, in a study encompassing a set of financial statement footnotes, Morton found a significant positive correlation between the qualitative criteria of relevance and understandability [19].

Although Morton's study appears to be the only one dealing specifically with the relationship between certain qualitative characteristics of accounting information, the reader may wish to compare the mean results presented in Table 1 to the findings of other empirical studies that have focused on user perceptions regarding accounting information. Several such studies have been reported. For example, more than a decade ago, Estes found that the analysts, bankers and financial executives he surveyed in the USA tended to feel that current cost information would be useful [9]. Estes assumed in his survey that current costs could be determined objectively and that the information would be presented only in supplementary form. Later, Brenner reported the results of a study involving stockholders, bankers, and financial analysts in the USA. He found that most respondents were not willing to substitute current cost information for historical cost information when determining earnings per share. He concluded that 'current values are desirable only if they are presented as supplementary information to historical cost figures' [8, p. 166]. The mean values reported in Table 1 suggest that analysts and bankers are highly sceptical today concerning the reliability of SEC replacement cost measurements. In 1975, Lee and Tweedie reported the results of a study to determine the use made of accounting information by stockholders in the UK [18]. One of their many findings was that UK stockholders are very interested in forecasted information. The mean responses in Table 1 suggest that analysts and bankers in the USA are somewhat concerned about the reliability of this kind of information at the present time.

It should be noted that a negative correlation between the relevance and reliability variables would be consistent with the common belief that these qualitative characteristics typically require trade-offs. However, no systematic evidence of a negative correlation was found. Thus, the results do not support a conclusion that a substantial amount of one quality must necessarily be sacri-

Table 1

Summary of Questionnaire Results

	Analysts				*Bankers*			
	*Mean**		*Kendall's*	*Prob.*	*Mean**		*Kendall's*	*Prob.*
	*Relevance***	*Reliability***	*Tau*	*Value*	*Relevance***	*Reliability***	*Tau*	*Value*
Items 1–8 are computed as of the end of the most recent fiscal year:								
1. Replacement cost of merchandise inventories	1.990	2.470	0.3784	0.001	2.116	2.496	0.3950	0.001
2. Historical cost of merchandise inventories	2.287	1.670	0.3814	0.001	1.991	1.667	0.3479	0.001
3. Replacement cost of plant and equipment (i.e., productive capacity)	2.150	3.900	0.3143	0.001	2.142	2.937	0.4626	0.001
4. Accumulated depreciation of plant and equipment (i.e., productive capacity) computed on a *replacement* cost basis	2.660	3.768	0.2689	0.001	2.779	3.062	0.5297	0.001
5. Historical cost of plant and equipment (i.e., productive capacity)	2.313	1.586	0.3462	0.001	2.152	1.652	0.3413	0.001
6. Accumulated depreciation of plant and equipment (i.e., productive capacity) computed on a *historical* cost basis	2.337	1.747	0.3006	0.001	2.257	1.796	0.3782	0.001
7. Identifiable assets associated with each industry segment of a business that operates in more than one industry	1.842	2.723	0.3231	0.001	1.920	2.265	0.3952	0.001
8. For companies with significant foreign operations, identifiable assets broken down according to foreign and domestic locations	1.762	2.420	0.3801	0.001	1.416	1.982	0.2899	0.001
Items 9–20 are computed for the most recent fiscal year:								
9. Replacement cost of goods sold	2.071	2.758	0.4581	0.001	2.393	2.625	0.4104	0.001
10. Historical cost of goods sold	2.059	1.653	0.4153	0.001	1.784	1.652	0.4455	0.001
11. Depreciation expense computed on a replacement cost basis	2.370	3.683	0.2682	0.001	2.655	2.900	0.5412	0.001
12. Depreciation expense computed on a historical cost basis	2.109	1.743	0.3947	0.001	1.883	1.748	0.4601	0.001
13. For companies that operate in more than one industry, revenue associated with each industry segment of the business	1.228	1.901	0.2949	0.002	1.295	1.670	0.2826	0.002
14. For companies that operate in more than one industry, operating income or loss associated with each industry segment of the business	1.168	2.277	0.1585	0.086	1.250	1.920	0.3133	0.001

15. For companies that operate in more than one industry, aggregate amount of depreciation, depletion, and amortization associated with each industry segment of the business	1.960	2.703	0.3796	0.001	1.768	1.982	0.4419	0.001
16. For companies that operate in more than one industry, amount of capital expenditures associated with each industry segment of the business	1.430	1.970	0.5002	0.001	1.438	1.732	0.3096	0.001
17. For companies with significant foreign operations, revenue broken down according to foreign and domestic sources	1.260	1.990	0.4943	0.001	1.223	1.795	0.2781	0.002
18. For companies with significant foreign operations, operating income or loss broken down according to foreign and domestic sources	1.210	2.465	0.5241	0.001	1.232	1.946	0.2100	0.018
19. For companies with significant export sales, information regarding the amount of export sales from the United States to unaffiliated foreign customers	1.760	2.041	0.4399	0.001	1.732	1.795	0.3470	0.001
20. Revenue derived from sales to a single major customer	1.561	1.670	0.2805	0.003	1.223	1.563	0.1842	0.040
Items 21–24 represent management's published forecast for the next fiscal year:								
21. Forecasted sales revenue	1.700	2.870	0.2982	0.001	1.513	2.661	0.3172	0.001
22. Forecasted net income	1.720	3.360	0.2267	0.010	1.487	2.830	0.2218	0.008
23. Forecasted earnings per share of common stock	1.790	3.380	0.2049	0.019	2.956	2.938	0.3097	0.001
24. Planned capital expenditures	1.540	2.370	0.2506	0.007	1.257	2.098	0.2859	0.001
Items 25–30 are computed for the most recent quarterly period:								
25. Sales revenue	1.390	1.600	0.5714	0.001	1.310	1.500	0.2659	0.003
26. Net income	1.340	1.950	0.3752	0.001	1.274	1.766	0.2099	0.018
27. Earnings per share of common stock	1.330	1.970	0.2202	0.017	2.903	2.000	0.2858	0.001
28. Provision for income taxes (i.e., income tax expense)	1.590	2.394	0.3909	0.001	1.832	1.946	0.3346	0.001
29. Extraordinary items (if any)	1.590	2.220	0.2945	0.001	1.522	1.911	0.3194	0.001
30. Cumulative effect of a change in accounting principles (if any)	1.596	2.232	0.3220	0.001	1.469	1.991	0.3190	0.001

*Technically, the median is a more appropriate average to use in a nonparametric statistical analysis. Nevertheless, the mean is reported here as an acceptable descriptive measure in order to facilitate comparisons of the results of this study with those of most other empirical studies that have focused on user perceptions regarding accounting information.

**Low mean values indicate more relevance (reliability), and high mean values indicate less relevance (reliability).

Table 2
Cross-tabulation of all Relevance and Reliability Responses*

		Highly Reliable	*Slightly Reliable*	*Neither Reliable nor Unreliable*	*Slightly Unreliable*	*Highly Unreliable*
Highly Relevant:	Number—	1345	1230	379	156	65
	Per cent—	21.2	19.4	6.0	2.5	1.0
Slightly Relevant:	Number—	306	890	461	246	49
	Per cent—	4.8	14.0	7.3	3.9	0.8
Neither Relevant nor Irrelevant:	Number—	106	173	314	121	42
	Per cent—	1.7	2.7	4.9	1.9	0.7
Slightly Irrelevant:	Number—	57	61	66	85	42
	Per cent—	0.9	1.0	1.0	1.3	0.7
Highly Irrelevant:	Number—	17	22	28	18	65
	Per cent—	0.3	0.3	0.4	0.3	1.0

*This table summarises 6,344 pairs of relevance and reliability responses rather than 6,420 (214 questionnaires multiplied by 30 pairs per questionnaire). The discrepancy is due to the fact that certain respondents failed to provide answers for every questionnaire item.

ficed or traded off in order to enhance the value of the other. Instead, both qualities may be enhanced simultaneously. An implication is that accounting researchers and policy makers should not be content with merely trying to improve the relevance of accounting disclosures. Resources must also be directed toward the development and perfection of methods designed to enhance the reliability of accounting measurements. In the area of replacement cost accounting, for example, considerable time has been spent arguing why this information is potentially relevant. Perhaps more resources should be expended to develop methods designed to enhance the reliability of these measurements. Enhancing this reliability should not conflict with—indeed, it should complement—the goal of increasing the relevance (and ultimately the usefulness) of the numbers reported.[6]

Of course, the existence of a positive correlation between relevance and reliability does not prove causation. Nevertheless, whenever a relationship between two variables is found, a tendency often exists to inquire concerning a possible cause and effect relation. In this regard, one possible interpretation is that relevance causes reliability. Under this interpretation, the more that an information item can help a user to determine alternative courses of action or to evaluate the outcome of an alternative course of action, the more the user can depend on the information as being representative of whatever it claims to represent. A second interpretation is that reliability causes relevance. Under this view, the more that a user can depend on information to be representative of whatever it claims to represent, the more the information can help the user to determine alternative courses of action or to evaluate the outcome of an alternative course of action. Conversely, when a decision maker cannot rely with confidence on certain information, that information would not be likely to be helpful in determining alternative courses of action or in evaluating the outcome of an alternative course of action.

The evidence accumulated in this study does not indicate that a causal relationship exists between relevance and reliability. Moreover, Kerlinger has warned that '... the study of cause and causation is an endless maze. One of the difficulties is that the word "cause" has surplus meaning and metaphysical overtones. Perhaps more important, it is not really needed' [17, p. 393]. Therefore, while speculating about the nature of a possible causal relationship might stimulate an interesting discussion, such speculation is beyond the scope of this investigation.

As with all empirical studies, the findings reported in this paper must be evaluated in light of the limitations imposed by the research design and implementation. For example, this study did not extend to all groups involved in the financial reporting process. Instead, an effort was made to confine the investigation to two user groups that are professionally involved in the making of investment and credit decisions. Of course, many groups other than financial analysts and bankers have a justifiable claim to published accounting information. For this reason, future research in this area should focus on other user groups in the US and in the UK.

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[6] Technically, a decision *maker*, rather than a decision *model*, approach to financial accounting theory is assumed in this discussion [see, for example, 4, pp. 10–21]. Nevertheless, decision makers regard information as useful only when it fits their decision models. Consequently, the subject of decision models has not been ignored in this investigation. Respondents simply used their own decision models when making their relevance and reliability evaluations.

Practical considerations led to a second important limitation of the study. That is, the questionnaire did not encompass all types of external accounting information. Instead, it was limited to thirty information items representing four general categories. Future research should focus on other items.

Since the study is based on an opinion-type questionnaire, the variables measured are actually *perceived* relevance and *perceived* reliability. Although appropriate care was used in the formulation and implementation of the survey instrument, it is possible that some respondents may not have been capable of gauging the intrinsic relevance and the intrinsic reliability of the information items considered. For example, the means reported in Table 1 indicate that, in general, the respondents attributed greater relevance to historical cost measurements than to the related replacement cost measurements. This finding contradicts most normative evaluations of these two measurement systems, such as Revsine's *Replacement Cost Accounting* [21]. This contradiction may perhaps be explained by the psychological phenomenon of functional fixation (or pre-conditioning) [see 15, pp. 160–164]. That is, most respondents are likely to have greater familiarity with historical cost measurements than with replacement cost measurements. For this reason, they may tend to react favourably to the familiar measurements and downgrade the relevance of the unfamiliar ones.

Finally, as is true of virtually all accounting surveys, the response rate was less than 100%. Although a direct test failed to suggest the presence of a material nonresponse bias, the reader is cautioned that extrapolation of the survey results to the total populations surveyed cannot be done with complete assurance. These limitations accentuate the importance of viewing the results accumulated in this study as merely the initial instalment in what it is hoped will become a growing body of empirical literature bearing on these paramount accounting concepts.

Conclusion

The results obtained support a tentative conclusion that the financial accounting concepts of relevance and reliability are positively associated. Thus, increases in relevance tend to be associated with increases in reliability and vice versa. No systematic evidence was found to support the common belief of accountants that relevance and reliability require significant trade-offs. Of course, this tentative conclusion awaits confirmation by the results of future research. Hopefully, as additional studies in this area are undertaken and reported, our knowledge regarding the inherent nature of the relevance-reliability relationship will be refined.

Acknowledgement The author gratefully acknowledges financial support for this project, provided through a Faculty Research Fellowship granted by the College of Business Administration, The University of Tennessee, Knoxville.

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Appendix

Questionnaire Sent to Analysts

Instructions

Please detach this page.

The following questionnaire consists of a number of information items that you might need when making a typical common stock investment decision. Next to each item are two scales to be used in evaluating each item based on the following criteria:

(1) *Relevance*—Information is relevant to your decision if it can help you to determine alternative courses of action or to evaluate the outcome of an alternative course of action.

(2) *Reliability*—Information is reliable when you can depend on it with confidence as representative of whatever it claims to represent.

You are requested to evaluate *each* information item *independently* and circle the response on *each* of the two scales that best represents your *personal opinion* concerning the relevance and reliability *to you* of each information item. The two scales are constructed as follows:

Relevance	*Reliability*
1 = Very relevant	1 = Very reliable
2 = Slightly relevant	2 = Slightly reliable
3 = Neither relevant nor irrelevant	3 = Neither reliable nor unreliable
4 = Slightly irrelevant	4 = Slightly unreliable
5 = Very irrelevant	5 = Very unreliable

Please evaluate each information item within the context of your making a typical decision to buy, sell, or hold a small (noncontrolling) number of common shares in a *publicly-held industrial* company.

Space is provided at the end of the questionnaire for you to make any comments that you feel should be considered in the study.

SECTION I. When responding to the items in this section, assume that you had obtained knowledge of each item from a typical *annual report to shareholders or a 10-K report filed with the SEC.*

	Relevance					*Reliability*				
	Very Relevant				*Very Irrelevant*	*Very Reliable*				*Very Unreliable*
1. Assume that each of the following items (a through h) is computed *as of the end of the most recent fiscal year:*										
a. Replacement cost of merchandise inventories	1	2	3	4	5	1	2	3	4	5
b. Historical cost of merchandise inventories	1	2	3	4	5	1	2	3	4	5
c. Replacement cost of plant and equipment (i.e., productive capacity)	1	2	3	4	5	1	2	3	4	5
d. Accumulated depreciation of plant and equipment (i.e., productive capacity) computed on a *replacement* cost basis	1	2	3	4	5	1	2	3	4	5

e. Historical cost of plant and equipment (i.e., productive capacity)	1 2 3 4 5	1 2 3 4 5
f. Accumulated depreciation of plant and equipment (i.e., productive capacity) computed on a *historical* cost basis	1 2 3 4 5	1 2 3 4 5
g. Identifiable assets associated with each industry segment of a business that operates in more than one industry	1 2 3 4 5	1 2 3 4 5
h. For companies with significant foreign operations, identifiable assets broken down according to foreign and domestic locations	1 2 3 4 5	1 2 3 4 5

2. Assume that each of the following items (a through h) is computed *for the most recent fiscal year:*

a. Replacement cost of goods sold	1 2 3 4 5	1 2 3 4 5
b. Historical cost of goods sold	1 2 3 4 5	1 2 3 4 5
c. Depreciation expense computed on a replacement cost basis	1 2 3 4 5	1 2 3 4 5
d. Depreciation expense computed on a historical cost basis	1 2 3 4 5	1 2 3 4 5
e. For companies that operate in more than one industry,		
● Revenue associated with each industry segment of the business	1 2 3 4 5	1 2 3 4 5
● Operating income or loss associated with each industry segment of the business	1 2 3 4 5	1 2 3 4 5
● Aggregate amount of depreciation, depletion and amortization associated with each industry segment of the business	1 2 3 4 5	1 2 3 4 5
● Amount of capital expenditures associated with each industry segment of the business	1 2 3 4 5	1 2 3 4 5
f. For companies with significant foreign operations,		
● Revenue broken down according to foreign and domestic sources	1 2 3 4 5	1 2 3 4 5
● Operating income or loss broken down according to foreign and domestic sources	1 2 3 4 5	1 2 3 4 5
g. For companies with significant export sales, information regarding the amount of export sales from the United States to unaffiliated foreign customers	1 2 3 4 5	1 2 3 4 5
h. Revenue derived from sales to a single major customer	1 2 3 4 5	1 2 3 4 5

3. Assume that each of the following items (a through d) represents management's published forecast *for the next fiscal year:*

a. Forecasted sales revenue	1 2 3 4 5	1 2 3 4 5
b. Forecasted net income	1 2 3 4 5	1 2 3 4 5
c. Forecasted earnings per share of common stock	1 2 3 4 5	1 2 3 4 5
d. Planned capital expenditures	1 2 3 4 5	1 2 3 4 5

SECTION II. When responding to the items in this section, assume that you had obtained knowledge of each item from a typical *quarterly report to shareholders or a 10-Q report filed with the SEC.* In addition, assume that each item is computed *for the most recent quarterly period.*

a. Sales revenue	1 2 3 4 5	1 2 3 4 5
b. Net income	1 2 3 4 5	1 2 3 4 5
c. Earnings per share of common stock	1 2 3 4 5	1 2 3 4 5
d. Provision for income taxes (i.e., income tax expense)	1 2 3 4 5	1 2 3 4 5
e. Extraordinary items (if any)	1 2 3 4 5	1 2 3 4 5
f. Cumulative effect of a change in accounting principles (if any)	1 2 3 4 5	1 2 3 4 5

SECTION III. Demographic Information.

1. What type of firm are you associated with (e.g., bank, brokerage house, insurance company, etc.)? Answer: ____________________
2. Would you please indicate the title of your current position? Answer: ____________________
3. Approximately how many years of experience do you have in financial analysis? Answer: ____________________

Please feel free to use the space below to make any comments that you feel should be considered in the study. *Thank you very much* for completing the questionnaire. Please return it to me in the enclosed postage-paid envelope.

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Announcements

An Overview of a Decade of Corporate Modelling in the UK

Peter H. Grinyer and Jeff Wooller

The growth of modelling

Within the last decade corporate modelling has grown rapidly, even when defined somewhat narrowly as the development and use of computer operated routines that map the financial logic of a company and produce financial reports such as balance sheets, profit and loss accounts, and statements of sources and uses of funds. In 1968 few companies had such models. By 1974 Grinyer and Wooller[1] found that 8% of the 1,000 largest UK companies, the 'Times 1,000', had them. A number of informed observers estimated that, at the end of 1978, between 40% and 50% of the 'Times 1,000' had corporate models; these estimates were possibly pessimistic.

Figure 1, giving the start dates for models in the 65 companies visited by Grinyer and Wooller, reveals that the rate of introduction quickened markedly after about 1968, and all the indications are that it increased after 1974. A rough index of the growth in modelling in the UK between 1974 and 1978 is the increase in the number of UK users claimed by computer bureaux in Grinyer and Wooller surveys of those years. Even allowing for the fact that some companies had used more than one bureau, either in turn or at the same time, the number was already high by 1974. In total the bureaux claimed just under 1,000 users. By 1978 the figure had risen by about 50% to just over 1,500. This difference understates the real increase, however, for the maximum number allowed for any one bureau is 100; where bureaux claimed a number of users exceeding 100 they were shown as 'in excess of 100'. The rate of increase is perhaps more evident from the fact that in 1974 only three bureaux claimed more than 100 users for their modelling system, whilst in 1978 as many as ten did so. Clearly the fortunes of different bureaux varied, some advancing but little, whilst others increased their number of customers tenfold over the four years. We would probably not be far out if we guessed that the number of corporate modellers had at least doubled and possibly trebled in the UK during the four years.

Types of model in use

This increased use of corporate models was associated with some very clear trends which reflected both learning from earlier mistakes and considerable marketing effort by computer bureaux in an increasingly competitive field. Grinyer and Wooller found that, by 1974, the simple, deterministic, financial simulation model was already dominant (see Figure 2). Inspection of type of model by year of start revealed, moreover, a strong trend away from optimising and probabilistic models towards this simpler alternative. A number of the modellers interviewed said that they had shelved optimising and probabilistic models in favour of smaller, deterministic simulation ones. Reasons given were that optimising models failed to reflect adequately the complex and changing mix of company objectives, sometimes suggested 'optimal solutions' which were not credible to managers, and were mostly ill-understood by managers outside the oil industry. Probabilistic models were seen as equally mystifying to managers, who found it difficult to estimate inputs or interpret output, and were thought by some to involve high costs of development, insurmountable problems of adequately representing interdependencies, and excessive running costs. It was such high costs which led Flower[2] to refer to probabilistic models as 'gold-plated'. This trend has continued strongly. The vast majority of models developed since 1974 have been relatively simple, deterministic, financial simulation models.

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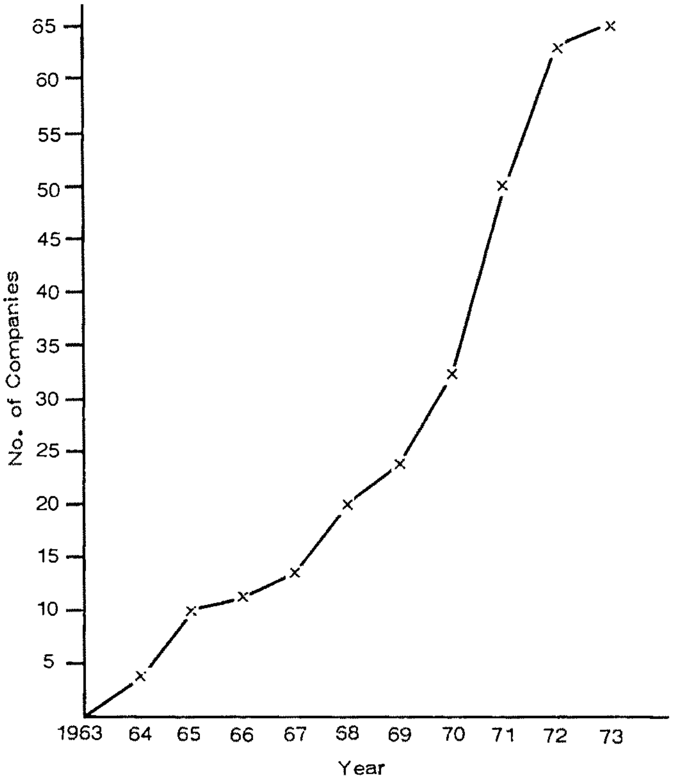

Figure 1
Cumulative Chart on Year of Start

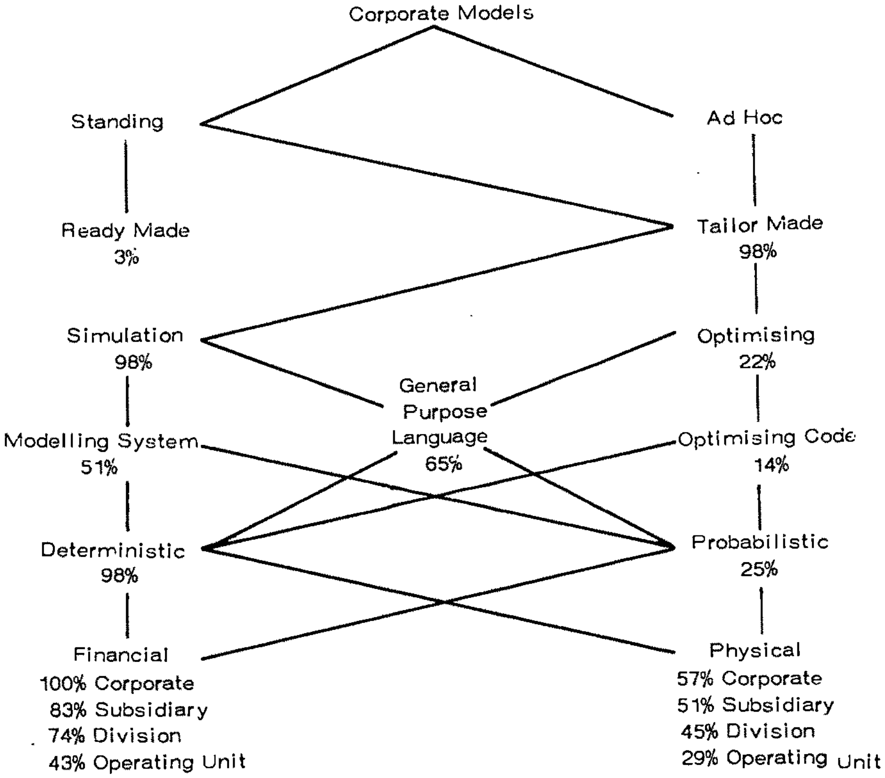

Figure 2
Links Between Types of Models

This trend has been associated with a move away from the huge models of the entire operations of the company (like Gershefski's[3] renowned but apparently ill-starred model of the Sun Oil company or the massive linear programming model of British Petroleum)[4] toward a modular approach within which smaller, more application-specific, models are linked, often by disk-held files. Large, integrated, 'monolithic' models took too long to develop, had excessive appetites for input data, were often expensive to run because they aggregated detailed data from operational level to successively higher hierarchical levels, were too often regarded as the property of no group of managers because they had been designed as general purpose tools, and involved a level of detail at the input stage which was often regarded as irrelevant to strategic decision taking. At Van den Burghs, for instance, it was possible to question the importance to long-term capacity decisions of optimising the material mix on the basis of estimates of distant prices, when probable errors in these and other predictions used were so high.

Moreover the models were time consuming to modify or update. Yet many of the strategic options that decision makers wish to explore involve structural changes in the company and hence the model. Where the model builder anticipated at least some of these, the options could be represented by choice of appropriate control parameters that determined which of alternative routines would be followed. But use of such devices increased the size of the model, its complexity, the difficulty of understanding it and learning how to operate it, development time and cost, and cost of running, yet were unlikely to cover all feasible structural changes.

Instead of following this approach, Unilever as a whole have tended to move towards the modular approach, as have other companies including British Petroleum. Small, application-specific models, linked via disk-held files when appropriate, have considerable advantages over large, integrated ones. An earlier pay-off is achieved after relatively little expenditure of time and money; managers can identify more closely with specific models clearly designed to meet their particular decision-making needs; the models are more comprehensible to managers; they have lower, more readily satisfied appetites for data, and can be more easily integrated into the existing planning process; data may be inspected and amended before transfer between models; and the individual model can be more easily amended to meet changing circumstances.

Grinyer and Wooller found that the trend towards simple, deterministic, financial simulation models, interlinked where appropriate, coincided with entry of a new breed of modeller. During the 1960s most models were developed by computer or operational research specialists, who saw corporate models as a means of extending their activities beyond the constraints of marketing and production studies. By 1974 there had been such a large influx of accountants, planners and other users that the dominance of the earlier, 'professional' modeller was already challenged. The trend has continued strongly since, with accountants now doing the lion's share of corporate modelling, and operational researchers entering when more complex marketing or mathematical relationships are involved. Whilst clearly associated with adoption of the modular approach, which permitted the inexperienced modeller to learn on small, simple models, without high cost or disastrous results, this entry of the accountant was above all related to a changed approach to programming.

In the 1960s corporate models in the UK, as in the USA,[5] were largely programmed in FORTRAN and batch run. Such models were frequently large, involving the processing of a mass of data, and producing voluminous reports; they were often time consuming and expensive to produce. Gershefski[3] calculated that 23 man years had been spent on the Sun Oil model. Grinyer and Wooller found that eight of their sample of 65 companies had spent over two man years on programming alone, and had also incurred total costs of over £50,000 on their models. Such effort and cost were largely associated with size of model and use of a general-purpose language like FORTRAN (see Figure 3). The time and cost of programming in FORTRAN, with sometimes poor file handling facilities, reinforced the weaknesses of the large, monolithic models already mentioned. Recognition of this led to development of high level languages orientated towards planning applications. With their associated file handling, editing and report generating routines,

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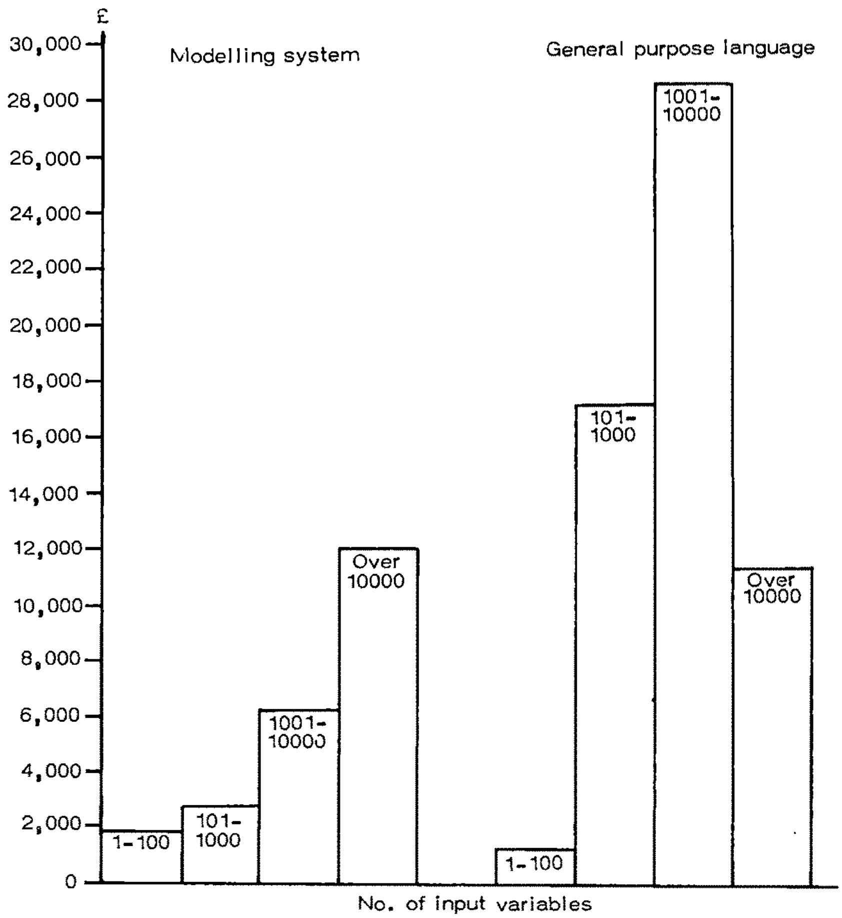

Figure 3
Average Costs of Models by Size Category

they have come to be called 'modelling systems' in the UK. Carruthers and Greggains[6] were perhaps the first to use this term which was subsequently adopted by Grinyer and Wooller among others.

Some of the earliest modelling systems were developed within companies for their own use. Schrieber[7] includes a description of such a development in Xerox, in the USA. However, there were parallel developments in the UK, for instance, in Unilever, RTZ and Wiggins Teape. In each of these cases, to spread the considerable cost of development, the company offered its modelling system for sale to others. At the same time, modelling systems were becoming available from computer main-frame suppliers, in particular IBM and ICL. The ICL modelling system (PROSPER), developed in the early 1960s mainly for its own internal planning purposes, now began to be used more widely, largely because it was available free to owners of ICL computers. Realising the potential, an increasing number of computer bureaux climbed on to the bandwagon, including IBM's CALL system (using STRATPLAN/AS) and ICL's Computel system (using PROSPER), and made available modelling systems on a time-sharing interactive basis. Modelling systems became an important part of their sales thrust and quickly began to overtake FORTRAN as the preferred method of programming. Those bureaux which had not developed their own modelling systems, or which decided that their early products had been superseded by those of competitors, then entered the fray often with software developed by specialists such as EPS (FCS) in the UK and SSI (SIMPLAN) in the

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[6] Carruthers, A. and Greggains, D. J. K., 'Simulation Under Focus', *Computer Management*, September 1971.

[7] Schrieber, A. N. (ed.), *Corporate Simulation Models*, University of Washington, Graduate School of Business Administration, 1970.

USA[8] or by companies such as Unilever and Wiggins Teape. The clear advantages of modelling systems, combined with the considerable marketing effort put behind them by the bureaux, led not only to their dominance as an approach to modelling but also the more rapid introduction of corporate models *per se*.

By using a constant planning horizon set at the start of a run, the concept of a common file format with time on one axis of a two dimensional matrix and variables on the other, and standard report-generating routines, the modelling systems were able to reduce input and output statements to a minimum and handle the time dimension automatically, so removing the need to program the 'DO' loops necessary in FORTRAN. Programming was further facilitated by introduction of special functions and subroutines, called by simple instructions, for dealing with depreciation, taxation, net present value and other financial calculations, as well as aggregation of financial results to successively higher levels of a corporate organisational hierarchy. When added to the software already available for setting up permanent and temporary files, editing, and statistical analysis, which were operated as standard features of timesharing interactive systems, this planning orientated software provided an easily learnt but powerful aid to financial planning.

Throughout the 1970s the modelling systems have been developed continuously and a wide range of sophisticated, yet cost effective, software packages is now available. Many, but not all of these, are tied to the use of a computer bureau. Indeed as many as 35 modelling systems currently available in the UK are analysed in Appendix 2 of Grinyer and Wooller. Some of these still have limitations, in terms for instance of somewhat restrictive constraints on the numbers of time periods, inputs or program statements handled, or possibility of only row operations (as opposed to column operations). However, quite a number now offer the user more facilities than he is likely to need. He may use row or column operations, optimising techniques, risk analysis, automatic sensitivity analysis, routines for iteratively determining values of input variables which would achieve specified values of chosen key output variables (backward iteration), as well as a wide range of statistical techniques, mathematical and financial functions.

The better modelling systems now permit the user considerable flexibility in his modelling and some allow routines programmed in FORTRAN to be imbedded within the model. One at least, TABOL (described more fully by Bhaskar),[9] allows the programmer to write in FORTRAN at any point within the modelling system program without even needing to signal the change in language, a facility which some value but others inevitably claim to be a doubtful advantage. Similarly, an appropriate choice of modelling language can give access to powerful data management systems, highly efficient editing routines, and flexible report-generating facilities which will aggregate rows or columns, and produce percentages, sub-totals, underlinings, pagination and titles with comparative ease.

These advances have led to significant reductions in programming costs. The cost of programming a model using a good modelling system may be no more than about a fifth of that of using FORTRAN. In the early 1970s, this cost advantage was, to some extent, offset by considerably higher running costs when frequent use and large volumes of data were involved. As many of the modelling systems required interpretive routines to convert their high level language into FORTRAN, which was in turn compiled into machine code, this meant increased core store requirement and additional use of the central processing unit. As improvements have occurred, however, this differential in running costs has narrowed, and is now claimed by some to be under 1·5 of that of running a FORTRAN program. It would be unwise to rely on this figure for any particular bureau, though, for their file storage and other bases of charging differ widely, and costs for running a similar model seem to vary quite considerably.

In addition to faster programming and hence lower development cost, modelling systems also offer ease of updating and above all of learning. Programming has become so greatly simplified, in some cases by the use of mnemonics, that the uninitiated can be taught to develop and run their own simple models within less than a week.

Hayes & Nolan,[10] in detecting similar trends within the USA, suggested that modelling systems would become associated with *ad hoc* modelling of specific problems by the ultimate users themselves. Such a tendency is not apparent in the UK. Most models are still 'standing' as opposed to '*ad hoc*': in other words a model is developed for regular use, is held on a permanent file, but may be dumped on to a temporary file for modification as appropriate in particular runs. Such an approach has considerable advantages in terms of speed and economy of use, and is appropriate insofar as large parts of many corporate models are basically generators of financial reports. Again, we know of only one finance director using corporate models who developed his own, and even he now leaves the task to younger, more junior accountants on his staff. Moreover, very few senior managers access the computer directly themselves, preferring to leave this to supporting staff. Hence the concept of senior managers undertaking *ad hoc* modelling and using the computer via terminals as an extension of their minds is, in the UK at least, unrealised and, we suspect, will be unrealisable for some years to come.

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[8] Naylor, T. H., *Corporate Planning Models*, Addison Wesley, 1979.

[9] Bhaskar, K., *Building Financial Models*, Associated Business Programmes, 1978.

[10] Hayes, R. H. and Nolan, R. L., 'What Kind of Corporate Modelling Functions Best?', *Harvard Business Review*, May/June 1974.

None the less, the rapid growth of corporate models, the development and widespread use of modelling systems, and the influx of the accounting fraternity have led to a complete transformation of the corporate modelling scene in the UK in the last decade.

Changing applications

Corporate modelling applications may be analysed into *ad hoc* or regular (scheduled), on the one hand, and evaluation of alternatives or control, on the other, the resulting four cell matrix being shown in Figure 4. Within each cell, applications may be analysed by hierarchical level within the company, and by function using the model. Grinyer and Wooller's survey provides a snap-shot of applications in the mid-1970s: 83% of companies had models extending to the subsidiaries, and as many as 43% to operating unit level. This reflects, in large measure, the early tendency to develop large, integrated models representing the detailed operations of the company. The major uses and outputs of the models are shown in Tables 1 to 4. One feature of these results from 1974 is very evident. The emphasis is on evaluation of alternatives, on an *ad hoc* or regular basis, the latter within a planning framework. Gershefski noted that development of corporate models followed corporate planning after about three years. Similarly, in the UK, corporate modelling was introduced in the early years as an aid to planning, a means of evaluating alternatives and extrapolating financial results on the basis of a variety of assumptions.

In 1974 and 1975, as the world economy entered perhaps its worst recession since the Second World War, the emphasis in many UK companies switched abruptly from long-term planning to survival, as their liquidity ratios deteriorated. Planners had often to devote their energies to liquidity planning. Short- and medium-term control became more important than evaluating long-term alternatives. Within this climate, corporate modelling received a fillip, but as an aid to control of cash flows. This was further reinforced by the impact of exchange rate changes, price control decisions, and the like on company performance. Access to a standing model permitted companies to calculate the effect of the latest uncontrollable fiscal, price, or other changes in a matter of minutes rather than hours and allowed speedy response.

At the same time, a number of conglomerates began to turn to corporate models as a means of

	Ad hoc	Regular, scheduled
Evaluation of alternatives	Appraisal of specific problems or projects of an *ad hoc* nature	Regular annual corporate planning
Control	Appraisal of financial implications of external events, such as changes in rates of tax or exchange rates, and of alternative responses open to management	1. Aggregation and analysis of monthly or quarterly financial reports of subsidiaries 2. Preparation of weekly or monthly reports on liquidity

Figure 4
Examples of types of application

processing financial data submitted by their subsidiaries as both a means of control and an aid to planning. All in all, while planning applications did continue, the mid-1970s saw a growing emphasis on the application of corporate models for control purposes.

The upswing in the economy from mid 1977 to mid 1979 witnessed a return to planning applications but associated with continued use for control purposes. With the return to recession in late 1979 we would expect the latter to have become more important again.

Table 1
Type of Planning in Which Models are Used

	No. of Companies	Percentage
(a) As *ad hoc* devices (e.g. for merger proposals) only	5	8
(b) In regular corporate and divisional planning only	29	44
(c) Both (a) and (b)	30	46
(d) As a research tool	1	2
Total	65	100

Table 2
Model Users

	No. of Companies	Percentage
Planners	21	32
Accountants	20	31
Operational researchers	9	14
Actuaries	2	3
Computer specialists	4	6
Others	9	14
Total	65	100

Table 3
Major Uses of Models

Application	No. of Companies	Percentage
Financial planning (up to 1 year)	25	38
Financial planning (1 to 5 years)	51	78
Financial planning (over 5 years)	29	45
Cash flow analysis	49	75
Aid marketing decisions	42	65
Aid production decisions	39	60
Project evaluation	29	45
Aid distribution decisions	25	38
Financing	9	14
New venture evaluation	9	14
Acquisition studies	8	12
Manpower	8	12
Aid purchasing decisions	7	11
Market share forecasting	5	8
Computer evaluation (purchase or rent)	3	5

Table 4

Output Reports Produced by Models

Report	Total Company	Subsidiaries	Divisions	Operating Units
Profit and loss	64	28	26	14
Balance sheet	51	24	16	8
Cash flow	50	24	18	10
Financial ratio analysis	44	20	15	12
Source and use of funds statement	36	18	13	7
Marketing operations	22	16	20	15
Project evaluation	22	16	8	10
Production	22	14	18	14
Distribution	19	11	13	11
Purchasing	7	5	5	4
Manpower	6	4	6	4
Financing	5	1	1	1
New venture	2	1	2	1

A prognostication

Looking into the future, we would predict a continuation of existing trends, but with some major changes. First, now that accountants have learnt to model, their dominance in the field of financial modelling is likely to continue. Indeed, in a number of companies they have already begun to extend their modelling beyond the financial domain, and their entry to an activity undertaken historically by mathematically orientated operational researchers may enrich it.

Second, accountants and others will continue to use modelling systems. These in turn will be further developed but in a manner to compensate for existing deficiencies. The modelling systems of some market leaders already include a plethora of routines suitable for financial modelling, and the marginal return to additional routines must be very small. Indeed, further sophistication, by adding to learning time as well as the core store requirement, could deter potential users. Yet improvement of editing, data management programs and output routines is still desirable in some of these cases. Similarly, some bureaux have placed heavy emphasis on development of excellent input, output, data management and editing software, but still have some way to go on incorporating financial routines for, say, tax calculations into their modelling systems. Further development is likely, then, to be a matter of market leaders matching the strengths of their competitors.

Third, the modular approach to modelling has such advantages that it is likely to remain with us. However, it is probable that a 'standing' aggregative financial model will receive inputs from more *ad hoc* as well as other standing models. As accountants and planners with modelling skills move up the management hierarchy, they may well turn to more *ad hoc* modelling of particular problems, and then input their results into the report-generating corporate model. Input to models may also come direct from the routine files supported by an accounting system.

Fourth, this trend towards *ad hoc* modelling is likely to accelerate because of the rapid spread of mini-computers. Packages such as FCS and FINAR have been available for use on mini-computers for some time, and others are expected to move in the same direction. With increasingly cheap, and more widely used, mini-computers it is probable that *ad hoc* modelling and generation of standard reports will be more and more on hardware in the users' own offices and that the use of computer bureaux for small *ad hoc* models will decline.

Fifth, the use of corporate models for financial control of subsidiaries is likely to spread, and computer bureaux may well be used as a medium for rapid transfer of data. A subsidiary can use its own model to prepare a monthly statement of performance against budget, which once released can be accessed by head office, printed out and questioned, or aggregated directly into higher level figures. Indeed explanations of variations from budget can also be held on file. Most of the leading bureaux offer extensive networks which can be accessed by local telephone. For example, the Honeywell system allows access, by such a call, from within the USA, UK, Continental

Europe or Australia to any file within minutes of its creation, given use of the appropriate user numbers, passwords and file name. The potential for centralising financial control is obvious. The dangers are perhaps less so, and care must clearly be taken when planning the system to protect to a reasonable degree the security and autonomy of managers below the corporate level.

Finally, ten years ago those just entering the field of corporate modelling, with brave and perhaps grandiose visions, were very much pioneers. During the last decade, they have learnt that simplicity, low cost, rapid development and solution of specific problems, rather than sophistication, mathematical complexity and general decision making aids, are what management wants. Consequently, they have moved to modular, simple, deterministic, financial simulation models, and have been strengthened in this change of direction by the entry to modelling of pragmatic but often mathematically limited accountants. Somehow, acceptance by the accountancy fraternity has given corporate models a legitimacy, and they are becoming integrated into the fabric of financial planning procedures. In the process, corporate models have become practical tools, rather than intellectual toys, and for this reason are likely to continue as widely used but rarely talked about aids.

If the 1960s was the decade of critical path analysis, which is now used as a matter of course where appropriate but is no longer the subject of high-level seminars, the 1970s has been that of the corporate model. It is perhaps a sign of maturity that the frequency of seminars on corporate modelling is already beginning to decline in the UK. In 1990 we will perhaps be talking about environmental models instead.

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The Establishment and Enforcement of Accounting Standards: Methods, Benefits and Costs

George J. Benston*

Introduction

In one important respect, accounting standards exist simply because there are public accountants; each person and firm decides the standard by which they want themselves known. Therefore, when one speaks for a mechanism by which uniform accounting standards can be established and enforced, the call necessarily is for imposing them on people who might prefer to behave otherwise. Uniform standards, though, may be imposed voluntarily, as when a group of accountants or firms agree to follow the same standards and to accept penalties if they violate their pledges. This generally describes the situation in the UK. Or the power of government may be invoked to enforce adherence to standards, as in the USA.

Whether one system of standard setting and enforcement is 'best' cannot be determined. Not all users have the same requirements for accounting data. Some want data that reflect cash flows, others would accept accruals, but not adjustments to the numbers that cannot be verified by reference to actual market transactions, while still others prefer estimates of economic values, but disagree about the basis on which these estimates are made.[1] These and other preferential differences make it conceptually impossible to demonstrate that one system is better than all others for all users. As Joel Demski's application of Arrow's Impossibility Theorem demonstrates, 'no set of standards (applied to the accounting alternatives *per se*) exists that will always rank accounting alternatives in relation to consistent individual preferences and beliefs.'[2] Michael Bromwich analyses the less ambitious task of constructing less than all-inclusive (partial) accounting standards and shows that even this limited task is fraught with conceptual difficulties.[3] However, the likely benefits and costs to groups of similarly affected individuals can be indicated and perhaps measured, the results of which should aid those interested in making judgments about the desirability of alternative types of accounting standards and methods of enforcement.

First, I delineate three types of accounting standards, after which three types of enforcement are described. These brief descriptions provide a framework for analysing the benefits from and costs of accounting standards to investors (who include some employees), public accountants, government, and society. Then the benefits and costs of a government mandated, regulatory commission system like the US Securities and Exchange Commission (SEC) are considered and contrasted with those from a private sector system, such as the standards set in the UK. A government sanctioned accounting court also is considered. The paper closes with my own conclusions and suggestions.

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[1] Possible citations abound. For example, see Colin J. Jones, 'Accounting Standards—A Blind Alley?' *Accounting and Business Research*, Autumn 1975, pp. 273–279 for arguments in support of cash flow reporting, and the many publications of Raymond J. Chambers for arguments calling for 'economically relevant' numbers.

[2] Joel Demski, 'The General Impossibility of Normative Standards,' *Accounting Review*, October 1973, p. 722. For a contrary view see R. J. Chambers, 'The Possibility of a Normative Accounting Standards', *Accounting Review*, July 1976, pp. 646–652 and for a reply see Joel Demski, 'An Economic Analysis of the Chambers' Normative Standard', *Accounting Review*, July 1976, pp. 653–656.

[3] Michael Bromwich, 'The Possibility of Partial Accounting Standards,' *Accounting Review*, April 1980, pp. 288–300.

Accounting standards—definition and delineation

For present purposes, the three types of accounting standards delineated are disclosure, presentation and content.[4] The first two are relatively non-controversial, which may obscure their importance. The last type is the most troublesome, and hence receives most discussion. Though the types are not mutually exclusive, and hence fail as clearly defined categories, I believe that the delineation is useful for the discussion.

Disclosure. This standard requires only an explicit description of the accounting methods and assumptions on which the numbers presented are based. For example, the financial statements could be limited to reports of cash flows derived from market transactions or could include accrued assets and liabilities. Price level adjustments or current costs could be employed in addition to or in place of other numbers. Different depreciation methods could be followed, but each would have to be described. However, there is no requirement that any particular number or variable (such as sales turnover) be reported.[5]

Although such a disclosure standard would seem to permit anything, it actually implies generally accepted definitions and requires an explicit statement of changes in the methods and assumptions followed. The use of generally accepted definitions, such as 'cash basis' and 'accrual accounting', increases the efficiency of communication and prevents disclosures from being confusing or misleading to users. Efficiency in communication is enhanced when common definitions are agreed to. For example, if 'sales' are defined by an adopted standard as meaning that 'the legal title to goods produced or held for exchange in the normal course of business have passed from the enterprise to a customer', and if this were the case, no further description is required. But if 'sales' included the values of goods transferred on consignment, the disclosure standard would require that the definition be made explicit. Should this disclosure practice not be followed, the financial statements are likely to be misleading to users who expect the standard definition. For similar reasons, the disclosure standard requires reporting of changes in the accounting methods or assumptions followed.[6]

I should note that the disclosure standard implies, though it does not require, some agreement among financial statement preparers of what the content of the statements should be. The fact that a standard definition of particular items is accepted and adhered to indicates some agreement that these items should be disclosed. But there is no requirement to report anything, though reporting is likely to avoid costs imposed by statement users (an important factor that I discuss further below). All that is required is that the items presented are not identified in a manner that is likely to mislead knowledgeable users.

Presentation. Standards can be adopted that specify the form and type of numbers presented. For example, it could be required that balance sheets list assets and liabilities in a particular order. Income statements also could follow a particular order. And fund or cash flow or other types of statements could be required. Presentation standards could differ for specific groups of companies (e.g., industries). The purpose of this type of standard is a reduction in the cost to users of recording and perhaps using financial statement data. It is not inconsistent with the disclosure standard, and may be applied in conjunction with it. As is the case for the disclosure standard, this standard implies some agreement about the content of the statements. However, this agreement is minimal, since it would be acceptable for some companies to report on the cash basis, others on the accrual basis, and others on historical cost, replacement costs, current costs, or general price-level-index-adjusted historical cost.

Content. Content standards specify what numbers are to be published rather than how they are to be published. Three aspects of content standards should be distinguished: disclosure, specific-construct, and conceptual.

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[4] See Harold Edey, 'Accounting Standards in the British Isles,' in W. T. Baxter and S. Davidson, ed., *Studies in Accounting, 3rd edition,* London: Institute of Chartered Accountants in England and Wales, 1977, pp. 294–305, for an excellent discussion and similar delineation from which I have borrowed.

[5] In this important sense, the meaning of the term, 'disclosure', differs from its use by advocates of government mandated reporting. Thus, though the US Securities Acts speak of disclosure as the keystone concept, the SEC's Accounting Series Release No. 4 (1938) declares that '... where financial statements filed... are prepared in accordance with accounting principles for which there is no substantial authoritative support, such financial statements will be presumed to be misleading or inaccurate despite disclosures contained in the certificate of the accountant or in footnotes to the statements provided the amounts involved are material.'

[6] The Accounting Standards Steering Committee's (ASSC) 'explanatory foreword' to the Statements of Standard Accounting Practice (1975) is in the spirit of the disclosure standard described. Members of the Institute are expected to 'use their best endeavours to ensure that standards are observed or, if they are not observed, that significant departures should, if material, be disclosed unless this would be impractical or misleading in the context of giving a true and fair view.'

A *disclosure-content* standard simply specifies the items that must be included in financial statements. The Companies Acts are examples of this standard. For example, the Companies Act 1967 requires disclosure of such items as debentures of the company which may be reissued, the basis of conversion of foreign currencies, and turnover (sales) unless the company is neither a holding company nor subsidiary and the amount does not exceed £25,000.

A *specific-construct-content* standard refers to the basis upon which individual items are to be reported, such as a rule requiring that research and development expenditures not be capitalised. The rule may be adopted by reference to a more general concept, such as only assets that have clearly measurable market (exit) values should be capitalised at no more than these amounts. But this is not necessarily the case. Rather, the rule may be the product of a solution to a particular problem, such as accountants' reaction to criticism when, in a well-publicised case, capitalised intangibles turned out to be overstated.

A *conceptually-based-content* standard requires a theory from which operational rules can be derived which can be referenced to adjudicate between alternative procedures. Thus a strict cash-flow concept of accounting provides rules or standards that can be applied to define how transactions should be recorded, aggregated and presented, e.g., an event that can be reported in an accounting statement has not occurred until the asset, cash, has been exchanged. General application of a conceptually-based-content standard assumes the existence of a coherent and complete framework or theory that governs accounting. Though some people believe that such a framework exists, or should exist, it is clear that they are far from agreement as to what it should be. Some people would want economic, present value concepts to be the basis for the measurement of values, some opt for exit values, others current replacement costs, others price-level adjusted historical costs, while some prefer a more consistently applied market transaction based, historical cost system.[7] As is mentioned above, there is no way to determine which of these theories is best for all. Hence the difficulty, if not the undesirability, of imposing a general content standard on external financial statements.

Methods of establishing and enforcing accounting standards

The accounting standards delineated above may be established and enforced by the following methods: evolution and voluntary individual compliance, private accountancy bodies, and governmental stricture. Not all of these methods are applicable to each of the three types of standards discussed, nor are the methods mutually exclusive, as is discussed next.

Evolution and Voluntary Individual Compliance. Though consistent with all three types of standards, this method is applicable principally to the first standard—disclosure. What is disclosed will be determined by individual enterprises. One aspect of their decisions about disclosure is the cost to others of using the disclosed numbers. As a result of experience which reveals the cost and benefits of disclosing and not disclosing specific numbers, a consensus is likely to be reached such that particular accounting rules and methods become 'generally accepted'. (The incentive for companies to disclose financial data is discussed below.)

Included in this method are accounting rules adopted by trade associations and other voluntary organisations, such as stock exchanges. They may find it desirable to impose disclosure, presentation or content standards on their members because of their belief that they will jointly benefit thereby. For example, the transaction costs to creditors or other investors may be lower if all members of the group follow standards that define specific assets and liabilities. Another example is the common disclosure of sales or expenditures on advertising.

Private Accountancy Bodies. Organisations such as the Institute of Chartered Accountants in England and Wales and the American Institute of Certified Public Accountants may impose standards to which their members must adhere. These standards may specify minimum reporting requirements or procedures for determining that the data reported meet minimum levels of quality (reliability). They may apply to any of the types of standards discussed above and, to date, have in some measure been concerned with all three types.

Governmental Stricture. Unlike the other methods, the force of law can be applied to compel performance. Three facets of this method are distinguished. One is government agencies, such as a utilities or banking commission, that require all members of a regulated industry to report or publish specified data. The rules on which these reports are based may be specified in whole or in part; usually the form of reporting (the presentation standard) is specified exactly. Included in this sub-group are income tax rules that define taxable income. Another is a law, such as the UK Companies Acts, that requires companies to prepare financial statements to be filed with a governmental agency, or in which specific items (such as directors' emoluments) must be disclosed. The third is determination and policing of accounting standards by a regulatory agency, such as the US Securities and Exchange Commission. The Commission is given the legal authority to define accounting standards that may be imposed on all corporations that are subject to the Commission's jurisdiction.

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[7] References to the numbers of papers and books that have been written in support of various theories on procedures would fill many pages.

The benefits and costs of establishing and enforcing accounting standards

Though the benefits (net of costs) of accounting standards to society, cannot, in principle, be measured, they can be specified for individuals. For the purpose of this analysis, people are aggregated into the following groups: investors, public accountants, government, and consumers. Each of these categories is discussed next, in turn.

Investors. Investors include present shareholders and other investors (including creditors and customers who rely on the position and prospects of the company), prospective shareholders and other investors, top managers, and other employees. The interests of shareholders, as residual owners of the firm, are considered first. In the course of the discussion, it should become clear that the owners have an overwhelming incentive to serve the interests of the other investors. It is assumed initially that they determine the financial information to be disclosed, from which they receive the benefits and incur the costs. Later, the role of managers of diffusely owned companies is considered.

Financial statements are produced for reasons which include communicating with creditors and other prospective investors and, possibly, for dealing with labour unions and/or employees directly. These parties (particularly creditors and other investors) assess the risk and return from investments in the company (compared to alternatives). Any costs they expect to incur, either from obtaining information or from assuming some possibility of loss, are, in effect, charged to the owners (present shareholders) of the company. Therefore, it pays the owners to provide these parties with financial statements and other information that will reduce the costs these users otherwise would incur.

Furthermore, financial data will be voluntarily disclosed because owners expect potential investors to fear the worst about their companies. Hence, these potential investors will reduce the returns they expect to obtain from investing in (or dealing with) the company to offset the losses associated with their fears. Therefore, the companies with 'good things' to reveal will disclose them and those that do not disclose are likely to be thought to have something to hide. Among the remaining (non-disclosing) companies are those that have less to hide than the others. For these 'better' companies, disclosure is preferable to the suspicion generated from no disclosure. The same process continues for the companies remaining. Finally, the companies that choose not to disclose items that other companies disclose evidently have decided that the negative aspects of disclosure (such as helping competitors) exceed the costs imposed by suspicious investors.

The company's owners, therefore, have an incentive to choose the accounting procedures and form of presentation of financial numbers that would be acceptable to users, since any costs imposed by poor or incomplete information on the users who want information about the company actually would be borne by the owners. Because the users may be a diverse group whose requirements, expertise, and tendency towards suspicion differ, the owners must attempt to achieve a balance between the overall costs of and benefits from disclosure. This calculation is similar to that undertaken for other business decisions, such as which products to produce and which distribution methods to use.

It should be noted that potential investors have reason to believe that the owners might mislead them (though perhaps not intentionally). After all, owners (like other people) tend to maximise their own welfare, which is not the same as the welfare of others. An important means by which owners can convince users of the veracity of accounting statements, and overcome the problems of moral hazard and adverse selection, is by having the statements attested to by people whose expertise and integrity is acceptable to the users. This role is played by independent public accountants. As I discuss in greater detail elsewhere,[8] public accountants have a comparative advantage over the company's employees in providing the attestation service.

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[8] See George J. Benston, 'The Market for Public Accounting Services: Demand, Supply, and Regulation,' *The Accounting Journal*, vol. 3, 1980.

Accounting standards would be valued if they reduced the cost of evaluating the statements to users. But the standards and their enforcement are costly, in several important regards. First, recording, transforming, and presenting data that a company would not disclose were it not required to do so is costly. Second, the more complicated and extensive the data base and presentation, the more costly is an audit and attestation by a public accountant. Third, for some companies, providing the information specified by the standards to investors may be exceeded by the costs of informing competition. Fourth, the specific numbers that the owners of one company believe will best inform investors are likely to differ from the numbers that another company finds most useful to investors (net of costs), because the circumstances of companies differ. In addition, inappropriate standards impose costs on users (and hence on company owners) because the users have to learn about the standards in order to know what to disregard. Therefore, for many individual companies, the costs from standardisation may well exceed the benefits. However, those companies that would produce the data required by a standard even in its absence would benefit from reduced costs to users and from obtaining the data from other companies.

I believe that most companies are likely to find a content standard based on economic concepts more costly than beneficial. The problem is that it is conceptually impossible for the numbers, to which public accountants would be willing to attest, to provide, in themselves, valid measures of economic value or changes in value until fitted into a user's model. In addition, the measurement of economic values requires use of an implicit discount rate, which is likely to differ among individuals. Therefore, any set of numbers reported is unlikely to meet all (perhaps even most) users' requirements. Even worse, numbers that purport to report economic values are likely to be incorrect when events are other than as predicted. These numbers then may be misleading to investors, who consequently may charge the companies and their accountants with negligence or fraud. Therefore, an economic value based content standard would decrease rather than increase investors' confidence in the company's owners' veracity.

In contrast, minimal disclosure and presentation standards are likely to yield greater benefits than costs for most companies. These standards tend to reduce the costs to users of interpreting and processing the data presented. In addition, investors may find useful the data published by companies other than the one in which they are contemplating an investment. Companies also may find other companies' data useful. But if these benefits cannot be captured by the companies individually, their owners will not individually have an incentive to publish the numbers. They may benefit jointly, however, by agreeing to standards that govern the presentation, quantity and quality of financial data. For example, they could voluntarily form groups, such as stock exchanges or trade associations, which impose standards on their members. They also might be in favour of governmentally enforced standards, particularly where the government could employ more effective sanctions against cheating. Companies that would find disclosure by others beneficial to them also have reason to favour government imposed standards. However, they probably will not benefit when the government officials' objective functions differ substantially from their own. As is discussed further below, this is likely to be the case.

Consider now the incentives for voluntary disclosure by the top managers of companies, the owners of which are diffuse. The owners of these corporations are not in a position to make or enforce disclosure policies. This is the situation for most publicly owned corporations. But before ownership becomes diffuse, the promotors and owners of these companies are likely to realise that, once they have ceded control to professional managers, the managers might choose not to disclose data that the owners want. Furthermore, if these data are not disclosed, the owners would be paid a lower price for their shares by other investors, who discount the expected cost of not getting the desired data. Therefore, the original promotors and owners have incentives to establish a system of reporting that managers would find difficult to drop or reduce. For this purpose, they arrange for control by an elected board of directors, for auditing by a recognised firm of independent public accountants, and often for subjecting the company to requirements enforced by an outside organisation, such as a stock exchange. Government mandated reporting also might be useful for this purpose.

Another, and probably no less important factor working for adequate voluntary disclosure, is the managers' and other employees' incentives for establishing and maintaining a public reporting system. They also are investors in the company, since they incur transactions costs when they change jobs, and since the ability of the enterprise to reward them for their performance is a function of how others in the company perform. As in the case for most persons, managers and other employees tend to maximise their own welfare. Hence they realise (as do owners and other investors) that they will be suspected of misusing company resources (that is, of using the resources in ways that do not maximise the owners' wealth). Their salaries and other rewards, therefore, are likely to reflect this expected behaviour. Thus they benefit from a control and reporting system that is cost effective in reducing this sub-optimal behaviour. But, as is true for the owners, the managers would not want to disclose information that would harm the company (e.g., by benefiting competitors) more than it reduces costs to investors.

Where non-management employees consider themselves or are considered partners of the managers and owners, in the sense that they work for a share of the wealth created, the accounting system may provide a means of establishing the amount of wealth that is to be divided. For this purpose, generally accepted accounting standards would be desirable, since these workers are likely to distrust accounts that are subjectively determined by management. It is in the owners' and managers' interest, therefore, to establish an accounting system that is trusted by those who use its output. As is discussed next, public accountants provide the service of assuring these people and others that the company's resources have not been misused and that the financial statements published are not designed to mislead users.

Public Accountants. Public accountants sell their expertise and integrity in auditing companies' records and attesting to the validity (in some sense) of their financial statements. A major reason for their employment in this capacity is that it is generally recognised that they stand to lose much should they be sloppy or dishonest in performing an audit or in agreeing to the publication of misleading figures. No doubt it is true that some accountants are people of such superior personal moral standards that users are satisfied simply to know that these people have attested to a company's statements. (I believe that the founders of the profession were successful because they were known for holding high personal standards.) Thus individuals and firms of accountants take their reputations for integrity very seriously. But users tend to rely on these and other public accountants, not only because of their personal integrity, but because the economic (and psychic) value of the integrity would be diminished, if not destroyed, were the accountants to perform badly or dishonestly; therefore the accountants have strong incentives not to do so.

Though individuals and firms are concerned primarily with their own reputations, the failings of other public accountants are likely to be costly if the public considers all public accountants to be of a class. Therefore, it is beneficial for like-minded public accountants to define themselves as a particular class identified by a form of trademark, such as chartered and certified public accountant, in addition to their identification as firms, such as Arthur Young McClelland Moores. While members of firms can police their fellow partners, it is difficult to monitor the performance of other chartered or certified public accountants. For this purpose, the establishment of standards to which all chartered or certified accountants subscribe is useful.

In particular, disclosure and auditing standards serve this requirement, since they can be achieved by experts who exercise due care and independence. Content standards also are desirable if they make audits more effective, and work against companies using financial statements to mislead investors. However, a content standard that called for assessments of economic values would endanger the reputation of public accountants, since it cannot be achieved and requires subjectively-based estimates that might mislead investors, or that appear, *ex post*, to have misled investors.

Public accountants may desire that accounting standards be enforced by government, for several reasons. One is the fear that competition among accountants may lead some to chance compromising their integrity. Another is the desire (common to most sellers of goods and services) to increase the demand for their products by legal requirements. A third is derived from the specialist's belief that the laity would benefit from a higher quality product, but does not recognise the benefits therefrom because of ignorance; consequently a legal requirement should be imposed. As is discussed further below, this requirement is likely to have unpleasant concomitant effects for public accountants when the authority for accounting standards is vested in government agents.

Government. Four aspects of the government's interest in accounting data and standards may be distinguished: taxation, regulation of enterprises, planning and regulation of the economy, and enhancement of economic efficiency and other social goals. Each is discussed briefly.

Income taxation requires a definition of income that is administratively efficient. If the government (by which I mean the collective will of the people or of those in power, as expressed by laws and regulations) wants the tax system to be economically neutral, the definition of taxable income should reflect the real economic activities undertaken by taxpayers. For example, if income is defined by historical costs, and an inflation is expected but depreciation rules are not changed, the net (after tax) costs of assets is greater because the deductible depreciation understates the economic sacrifice involved. In this situation, taxpayers will shift their resources to other assets and to consumption. If the government wants the tax system to be biased in favour of, say, investment over consumption, it might subsidise the purchase of productive assets by permitting higher rates of depreciation. Equity considerations may also be a desired outcome. For example, when an unexpected inflation occurs, resources are shifted from creditors to debtors (unless their contracts are price-level indexed). Government might want to mitigate these windfalls with taxes. In any event, it would seem preferable (from the government's point of view) that the definitions of taxable income yield the desired, as compared to other, outcomes.

Administrative efficiency also is an important aspect of taxation. Two costs of collecting taxes might be delineated. One is the resources used by taxpayers to avoid taxes. Since a tax is an expense that is equivalent to any other expense for the individual taxpayer, it pays taxpayers to organise their affairs to the point where the marginal value of resources used to avoid taxes equals the marginal amount of taxes avoided. But for society, these resources are wasted, since, given a legislated level of government expenditures, someone must pay the taxes. The other expense is the resources used by the government to assess and collect the taxes.

For administrative efficiency, it is useful to base taxable income on the records designed for a business' control and reporting requirements. These records are audited and, since they are maintained in any case, using them reduces the cost of the tax system to society. Both types of administrative expense can be reached by presentation and content accounting standards, since they tend to make the tax incidence more certain. But, because the measurement of economic values necessarily is subjective, and hence difficult to administer, a compromise between the goals of taxation must be made.

In deciding the specific accounting standards that will achieve its goals, government is not well advised to rely completely on the standards developed for financial statement reporting. As is discussed above, internal control and public reporting are determined by the costs and benefits to the enterprise. The government, though, is likely to want other net benefits. For example, immediate write-off of assets may be permitted for tax purposes as a means of subsidising investment. Whether or not company owners and managers believe that the benefits from using price-level adjusted data or current cost data are worth the cost, the government nevertheless could base taxes on these data if it believes that historical cost-determined taxable income results in misallocated resources, the cost of which exceeds the cost of change. Because companies individually cannot capture fully the benefits from a better tax assessment system, the government should not expect them voluntarily to adopt the 'best' accounting system from its viewpoint.

Regulation of enterprises often is based on accounting data. For example, the rate that US public utilities can charge is determined by the rate of return they earn on their assets. Insurance companies and banks report financial data that inspectors use to evaluate their operations. As is the case for income taxation, the required accounting procedures tend to be those that impose the least costs on the regulated and the regulator. Hence, presentation and content standards are imposed, with the emphasis on administrative efficiency. For this reason, the standards may be (and usually are) somewhat different and more highly specified than are the standards that individual enterprises adopt for other purposes.

It is important to note an inherent problem when government agencies attempt to use accounting reports for economic planning purposes. Because of the subjective nature of economic value, accounting numbers are poor and often misleading indications of the current or past status and periodic economic changes of the enterprises in the economy. Furthermore, should government want to obtain numbers that can be collected and aggregated with reasonable efficiency, it must specify exact and complete accounting content standards. But the result of this specification necessarily is less economically meaningful numbers. Rather than impose data preparation and collection costs on enterprises and (probably of greater importance) costs on the economy of decisions based on inappropriate data, government would be well advised to recognise the accounting system's limitations and look elsewhere for numbers or question the advisability of much economic planning and control.

The enhancement of economic efficiency and other social goals might be achieved if the optimal publication of accounting data by companies could be obtained by means of government action. One action might be the specification of presentation standards to facilitate the recording and comparison of data among companies. Content standards also might serve this purpose, subject to the important limitation that economic content generally cannot be standardised. As is discussed above, companies may not publish data because they cannot capture the full benefits to users (the externality) of the data, such as evaluations of investment opportunities in other companies. Another possible benefit is more accurate evaluation by the public of enterprises generally. For example, publication only of historical cost-based income figures in an inflationary period may result in the public's or labour unions' overestimation of business profits and their consequent demand for higher taxes or wage settlements. The government also has the power to enforce standards by punishing cheating with fines and other sanctions.

Two important limitations of the possible benefits from government imposed standards should be emphasised. One is that individual companies have incentives for publishing data that are in relatively easy-to-use forms and that do not give the public and labour unions a potentially damaging perception of the company's economic position. (These incentives include joining together with other companies to follow common standards.) The second is that government mandated standards are costly and the costs can exceed the benefits. Because these costs differ importantly depending on the type of system of government mandation adopted, a further discussion is undertaken in which the UK's essentially passive system is contrasted with USA's active system.

A comparison and evaluation of alternative methods of enforcing accounting standards[9]

Government Mandated Rules—The Securities and Exchange Commission (SEC). The SEC was created in 1934 to administer the Securities Act of 1933 and the Securities Exchange Act of 1934. Five full time commissioners, appointed by the President, preside over a large staff of professional and other employees. The Commission is given the responsibility and authority to prescribe accounting standards and rules for reports filed pursuant to the Securities Acts. All corporations with over 500 shareholders and $1,000,000 in assets are legally obligated to file periodic reports with the Commission conforming to the accounting rules and standards that it promulgates and including the items that it specifies. Furthermore, the Commission defines the conditions under which public accountants who attest to the statements are considered 'independent', and disciplines attesting accountants who violate these conditions.

Those who believe that accounting standards are desirable and are upset because evolutionary, voluntary developments are too slow and, in any event, appear to be incomplete, might favour an SEC type of enforcement. The advantages claimed for such a commission include the following: (1) the rules can be adapted to changing circumstances by experts who are in continual contact with the reporting problems of companies and with users' changing requirements; (2) the SEC has the legal authority to enforce standards, and thus can provide a goad to the accounting profession to develop standards and prevent 'free riders' from not complying with the standards; and (3) the SEC has the resources (financial and experiential) to develop and design standards in an attempt to optimise social net benefits. However, these expectations have not been met in the USA. Furthermore, I believe that such a commission is inherently unlikely to act other than as the SEC has acted over its history.

A regulatory commission, such as the SEC, necessarily is staffed with people, who (like others) tend to maximise their own welfare. When a commission is given power and responsibility, it generally uses them because its officers will be criticised if they fail to have put a regulation in force that, at least in appearance, might have prevented or mitigated a real or apparent crisis. (It is important to emphasise that appearance is as important as, perhaps even more important than, reality, since public criticism often is based on appearance alone.) Unlike a private enterprise, though, the commission does not benefit from resources saved when unnecessary regulations are removed. Therefore, the commission tends to be conservative, in the sense that it continues old regulations even when they appear to be no longer useful, and adds new regulations in response to each problem, real or presumed. Furthermore, the commission prefers administratively efficient regulations, regulations that can be described by written rules and that protect the commission from public criticism of its administration. Thus the accounting standards adopted and enforced need not be (indeed, are unlikely to be) those that would capture for society the externalities of non-mandated financial reporting.

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[9] A more complete comparison of the administration of accounting disclosure laws in the UK and the USA may be found in George J. Benston, *Corporate Financial Disclosure in the UK and the USA*, Saxon House/Lexington (DC Heath) and the Institute of Chartered Accountants in England and Wales, 1976, especially Chapter 5.

Throughout most of its 45 years' history, the SEC has operated in a manner similar to that sketched briefly above. Though it delegated much of its authority to promulgate accounting standards to the organised accounting profession, it early established a strong, conservative, historical-cost bias. In particular, it acted vigorously in insisting that intangible assets (especially goodwill), and similar items that are not likely to be objectively determined, be written off as expenses. Other types of 'soft information' also were excluded from documents filed pursuant to the law. These included sales and profit forecasts and asset revaluations (including price-level adjustments). Thus the Commission acted to make its task administratively convenient and defensible, even though the result was that financial statements tended to provide less information to users. As problems and minor crises occurred new regulations were added; almost none were withdrawn. When activism among US regulatory agencies and legislatures became popular in the 1960s, the SEC also changed its policies in that it added a relatively large number of new regulations and other requirements, including adoption of mandatory fixed asset replacement cost estimates for large corporations. However, the SEC has not attempted to establish 'new' accounting standards directly, with a few exceptions.[10] But it has promulgated very detailed rules that govern the items that must be reported.

In summary, the SEC has not acted to establish overall accounting content standards that reflect economic values, despite its legislated power to do so. The Commission's reluctance, I suggest, stems from its realisation that the political costs potentially incurred would exceed the benefits to it as an agency. The costs include disagreements among the constituents (e.g., accounting practitioners, security analysts and brokers, companies, the press, and legislators) as to which standards to apply. But perhaps of greater importance is the Commission's recognition that general content standards that purport to provide economic measurements open it to potentially damaging criticism. However, the Commission has not been inactive. It has established presentation standards and a very large number of specific rules that attempt to govern almost every situation that has come to its attention. Thus companies and public accountants are faced with the expense of learning and following these regulations, while it is doubtful that users have achieved much in the way of benefits.[11]

Private Sector Standard Setting—The UK Method. The Companies Acts specify that financial statements are to be produced by companies, which items are to be disclosed therein, and rules governing measurement of some of these items. In this important regard, accounting standards are not privately determined. The accounting bodies, through the Statements of Standard Accounting Practice, specify standards that qualified accountants should follow. However auditors can accept statements that are based on other methods, if they quantify the difference and explain why the alternatives are more consistent with 'a true and fair view'. Or auditors can object to the use of other alternatives and qualify their attestations. The Stock Exchange also can demand that certain additional reporting standards be followed, but, as in the USA, they tend to follow and support the accounting profession's pronouncements.

Some critics object to the UK system because only the Companies Acts can require strict adherence to standards. Aside from the provisions of the Acts and some Stock Exchange requirements (which apply only to listed companies), these critics complain that only a disclosure standard is in force, particularly since companies can and do accept qualified attestations.

An Accounting Court as a Means of Enforcing Standards. A statutory accounting court has been suggested, to which companies that do not follow accounting standards established by the Accounting Standards Committee (or similar body) could be brought.[12] The companies charged would have to demonstrate that the procedures they used are preferable to those described in the adopted standards for presenting 'a true and fair view'. The function of the court would be to adjudicate disputes and therefore enforce accounting standards and establish a body of case law to which future decisions could be referred. A review of the activities of such a court in the Netherlands, however, provides reasons to believe that it would not serve this purpose well. After reviewing the court's case history, Jan Klaassen concludes: 'Only the issues put forth by the plaintiff are judged by the court. It does not take a position on other issues. It makes its judgments only on the specific circumstances of each case. This makes the Enterprise Chamber an inadequate vehicle for the development of accounting standards.'[13]

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[10] Recently, the SEC overturned an accounting standard adopted by the Financial Accounting Standards Board (FASB) that would have required oil and gas exploration and development companies to use successful-efforts accounting, and substituted an as yet not implemented requirement that present value accounting be used to value fuel reserves. As a consequence the FASB withdrew its standard.

[11] See Benston, *ibid*, Chapter 5, for the reasoning and evidence on which this conclusion is based.

Conclusions

The establishment and enforcement of accounting standards requires, as a minimum, a clear and accepted idea of what the standards should reflect. I suggest that such standards include the following: (1) the accounting statements presented should disclose any material deviation from the expected stewardship of a company's directors and top management (as defined by the statutes and the courts); it should report on the outcome of an audit carried out under generally accepted auditing standards; (2) the statements should report data that are objectively determined from market transactions; adjustments made to the data (such as accruals, allocations, revaluations, and price-level adjustments) should be described either by reference to generally known procedures (if these were established) or with sufficient descriptions; and (3) changes from previous periods in the reporting procedures followed should be explained so that users are not misled. I believe that it is theoretically impossible for financial statements on accounting measurements to report the economic value of the enterprise as a going concern. Therefore, content standards that attempt to bring this about are not operational.

The question as to how accounting standards should be established and enforced is answered by reference to the net benefits of the externalities involved and the costs of administration. I believe that the magnitude of the externalities that could be gained from mandating accounting standards is small. This conclusion is based on the assumption that the private producers of accounting statements presently have incentives that result in their individually publishing close to the optimal amount and type of data, or in creating voluntary organisations that compel the members to disclose close to the optimal. On the other side of the equation, the USA's experience with the SEC leads me to conclude that it is not likely that such an agency will or even can determine the optimal set of information to be disclosed or the 'best' accounting standards to be followed. To the contrary, the agency has incentives to add considerable costs and few benefits to the disclosure process, and tends to do so. Similarly, I expect that if an accounting court evolved into a standard setting agency, it would be subject to the same behavioural forces, and these would result in its degeneration into an administrative agency such as the SEC.

In any event, before changes in the present system in the UK are considered further, I suggest that the objections to the present system of setting and enforcing standards be examined more closely. In what ways is it deficient? What reason is there to believe that these deficiencies are not inherent and are best recognised as such? Have the costs of improving the system (including the costs of making and interpreting changes) to companies, accountants, and users been fully considered and compared with the expected benefits? If change appears desirable, can an educational process rather than mandatory standards be used as a means of improving reporting? Until these and other questions are resolved, or at least considered, I suggest that caution is the wise policy.

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[12] As best I could learn, an accounting court was proposed first in the USA by Leonard Spacek, who outlined the procedures under which it would operate in 'Draft of a Bill That Would Create a United States Court of Accounting Appeals,' in *A Search for Fairness in Financial Reporting to the Public* by Leonard Spacek, Chicago: Arthur Andersen & Co., 1969, pp. 576–582. Edward Stamp also called for the creation of an accounting court that would be empowered to accept accounting statements (in one version) or rule on disputes (in another version). See 'The Public Accountant and the Public Interest,' *Journal of Business Finance*, vol. 1 (1969), pp. 32–42, reprinted in Edward Stamp and Christopher Marley, *Accounting Principles and the City Code: The Case for Reform*, London: Butterworths, 1970, pp. 168–187.

[13] Jan Klaassen, 'An Accounting Court: The Impact of the Enterprise Chamber on Financial Reporting in the Netherlands,' *Accounting Review*, April 1980, p. 337.

The Imputation System, Cost of Capital and Dividend Policy

D. Kent and M. Theobald

I Introduction

The imputation system of corporate taxation replaced the 'classical' system from 5th April 1973 as a result of the provisions of the Finance Act of that year. One of the anticipated effects of this change was a reduction in the bias against distributions present in the classical system as a result of the economic double taxation of dividends present under that system. The effective cost of the dividend paid by the firm under the imputation system would be reduced to the net amount received by the shareholders (save for the lagging effect of Advance Corporation Tax (ACT) set off). However, as we shall see, the imputation system itself is tending to bias against distributions in certain cases even without the aid of the formal payout restrictions which have been imposed as an adjunct to government pay policy.

Section II of this paper will introduce formal models to demonstrate the ostensible effects of the introduction of the imputation system in terms of effecting a reduction in the bias against the payment of dividends and also in terms of reducing the effective cost of such dividends. Section III will seek to show, within the framework of the models developed in Section II, that other amendments have, for some companies, caused the benefits of the imputation system to be diminished or even negated due to their inability to recover part or all of the advance corporation tax paid over in respect of dividends. Finally, in Section IV, we present our conclusions.

II Formal models of the effects of tax upon dividend policy and cost of capital

Capital asset pricing theory (see Sharpe, 1964, Lintner, 1965 and Mossin, 1966) has provided a useful framework within which to analyse many problems in the field of finance (see, for example, Rubinstein, 1973). The original capital asset pricing model was derived by invoking fairly strong assumptions, one of which was the existence of a perfect capital market. This simple model, then, does not provide the means whereby an analysis of the effects of personal taxation can be carried out, since the perfect capital market assumption effectively removes such 'frictions'. Brennan (1970), however, has extended the simple capital asset pricing model to incorporate heterogeneous, proportional investor taxes. The resultant model is a single period model of the form:

$$E(R_j) = r_F + \beta_j(E(R'_m)) + T(\delta_j - r_F) \qquad (1)$$

where

$E(R_j)$ = the expected return (i.e. capital gains plus dividend yield) for firm j;
r_F = the risk-free rate of interest;
β_j = the systematic risk factor for firm j;
$E(R'_m)$ = the excess after tax return on the market portfolio;
δ_j = the dividend yield for firm j;

and

T = a function incorporating the difference between the weighted personal and capital tax rates.

For ease of notation we will drop the use of the firm subscript in the remainder of the paper. What this model implies is that, due to higher personal income tax rates, at equilibrium, investors will require larger pre-tax returns in high yield companies to compensate them for their increased tax liability due to income, rather than capital gains. The Brennan model is important since it affords a means of extending the original Miller and Modigliani (1961) analysis of dividend policy in the presence of taxes to an equilibrium framework. Miller and Modigliani argued that, although lower capital gains tax rates would tend to lead to a preference for retentions, 'clientele' effects could directly counteract this.[1] However, without an equilibrium model of stock returns it is not possible to determine whether these effects are sufficiently systematic to lead to price changes being associated with dividend changes.

The model has been empirically tested by Brennan (see Jensen, 1972 for a summary of his results) and in a simulation experiment by Stapleton and Subrahmanyam (1977). Both supported the basic model. Rosenberg and Marathe (1975) did find some support for a dividend effect but Black and Scholes' (1974) study did not support the model. Of course, the present state of capital asset pricing *testing* has been severely criticised by Roll (1977), who demonstrates, among other things, that the risk-return linearity relationship is a mathematical identity resulting from choosing market portfolio proxies that are on the efficient frontier.

Brennan demonstrated that the payment of dividends under the classical tax system was suboptimal for all investors, irrespective of their marginal tax rates (i.e. $\partial P/\partial D < 0$, where P is the stock price and D the dividend). Thus, dividend policy *is* relevant in imperfect capital markets where differential tax rates exist, and the payment of dividends by corporations will lead to a fall in the share prices of such firms.[2] The question then becomes—why do firms pay dividends? Brennan suggests that dividends will be paid when there is a binding constraint upon share repurchases. Additionally, Miller and Modigliani (1961) have suggested that dividends convey information to the market (although existing empirical evidence (Watts, 1973) does not strongly support this hypothesis). Theobald (1977) demonstrates that it is advantageous to pay a dividend when capital gains are subject to variable transaction costs and dividends are not. These justifications are far from exhaustive, but do indicate some of the potential sources of utility arising from dividend payments.

The ostensible effect of the imputation system is to reduce this bias against dividend payout. In the case of the classical system, the fall in share price will be proportional to the difference between the weighted average personal (T_d) and capital (T_g) tax rates:

$$\frac{\partial P}{\partial D} \propto -(T_d - T_g) \tag{2}$$

The weighting scheme across market agents is dependent upon the marginal rates of substitution between expected return and variance of return.[3] The bias against dividend payments may be removed by taxing capital and dividend returns at the same rate. It might be argued that, because investors can defer capital gains tax payment by not liquidating shareholdings, the effect of the capital gains tax is overstated in the single period analysis, if, indeed, it is accepted as being appropriate within a single period model (i.e. $\partial P/\partial D$ should be proportional to $-T_d$ only). Brennan abstracted from this problem in his paper.

If we denote the tax credit 'payable' under the imputation system as t_c, then the change in share price due to increased dividend payout modifies to:[4]

$$\frac{\partial P}{\partial D} \propto t_c + T_g - T_d(1 + t_c) \tag{3}$$

Thus, provided $t_c > 0$, the bias against dividend payout is reduced, and if:

$$t_c = \frac{T_d - T_g}{1 - T_d} \tag{4}$$

the tax system will be neutral in the sense that there is now no longer any dividend payout bias (similar results are presented by Stapleton and Burke (1977), assuming zero capital gains taxes).

The cost of equity capital is often calculated from 'text-book' valuation formulae of the type:

$$P = \frac{D(1 + g)}{r - g} \tag{5}$$

where g is the expected dividend growth rate and r the effective cost of equity capital. Although this type of formula is not favoured by academics[5] —a dynamic programming/capital asset pricing approach to capital budgeting seems to be preferred—such formulae are often used in applied work (see Reinhardt, 1973).

Under the classical system, the effective cost of a dividend to a firm is the gross dividend, while under the imputation system the cost reduces to the net dividend, save for a timing difference.[6]

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[1] Black and Scholes (1974) argue for dividend irrelevance in a world of differential capital and personal taxes via a 'supply' effect.

[2] This observation was confirmed in the simulations by Stapleton and Subrahmanyam (1977). They further demonstrated that the market value of the firm was dependent upon its particular dividend policy and not upon its clientele.

[3] This has the effect that the weights are proportional to the relative shareholdings of risky assets.

[4] The constant of proportionality is the same in both equations (2) and (3).

[5] Carsberg (1974), Ch. 9, analyses the problems of using such model types when taxes are incorporated into the analysis. Myers (1974) analyses necessary and sufficient conditions for the use of the related weighted average cost of capital concept.

[6] Assuming the basic imputation system, with no restrictions regarding ACT set-off.

Thus, under the imputation system, equation (5) modifies to:

$$P = \frac{D(1+g)}{r-g} - \frac{\frac{t_s D}{(1+r)^n}(1+g)}{r-g} \qquad (6)$$

where t_s is the rate of income tax, and n the number of periods lag before ACT set-off.

III The present situation

The reduction of the effective cost of a dividend to the net dividend payable is achieved by allowing advance corporation tax to be set off against future corporation tax liability payable. In other words its effectiveness depends upon the existence of future corporation tax liabilities.

In practice, however, two important factors must be taken into consideration:

a. *The reduction of corporate taxable profits.* First Year Allowances, given on the purchase of plant and machinery, and Stock Appreciation Relief, which allows companies to charge a substantial part of any increase in stock values against taxable profits, have had the effect of ensuring that the taxable profits of most companies are less, often much less, than the accounting profits.

The impact of this is enhanced by:

b. *Restrictions on the right of set off of advance corporation tax.* The amount of advance corporation tax which may be set off against the corporation tax liability must not exceed the amount which would have been payable had the company made a distribution on the last day of its accounting period, the gross equivalent of which was equal to the company's income charged to corporation tax for that period. Amounts in excess of this may be carried backwards for two years or forwards *ad infinitum.*

Dividends are regarded more as a function of accounting profits than of taxable profits and, due to the disparity between these two figures which can now arise, a dividend pattern which might appear excessive for taxable purposes need not be unusual within the context of accounting profits. In such cases, a company which cannot reasonably foresee the recovery of part or all of its advance corporation tax within the near future must write it off as irrecoverable. The bias against dividends may thus be reintroduced towards the level present under the classical system, when a particular firm has a small taxable profit *vis-à-vis* its accounting profit and when this is expected to continue for some time.

The reintroduction of the bias against dividend payment can be demonstrated within the framework of models (2) and (3) developed in the previous section. If the limiting case is considered in which ACT is fully written off as irrecoverable then, under an established imputation system, equation (3) modifies to:[7]

$$\frac{\partial P}{\partial D} \propto T_g(1+t_c) - T_d(1+t_c) \qquad (7)$$

$$\propto -(T_d - T_g) \qquad (7')$$

That is, we are in a similar situation to that depicted in model (2) wherein, for dividend neutrality, the weighted average capital gains and income tax rates must be equal. It should be noted that the partial differential in model (2) is with respect to *gross* dividends paid while in models (3), (7) and (7′) it is with respect to *net* dividend paid. The constant of proportionality above in (7′) and in model (3) differs by the grossing-up factor, $(1 + t_c)$.

The same rationale will imply that the effective cost of dividends will be something between the net dividend paid (when ACT is fully recoverable) and the gross equivalent (corresponding to the situation when ACT is completely irrecoverable). When ACT is fully recoverable against corporation tax liability, the cost of capital will be determined from model (6) as:

$$P = \frac{D(1+g) - \frac{Dt_s}{(1+r)}(1+g)}{r-g} \qquad (8)$$

That is, model (6) with n set equal to 1, the effective cost of the dividends to the firm being the net of tax cost, save for the timing difference (when $n = 0$, the cost of the dividend will be the net of personal tax dividend). However, as ACT set-off is delayed, the effective cost of the dividend payments will increase towards the gross dividend. In the limiting case of indefinite delay:

$$\lim_{n\to\infty} \frac{t_c D}{(1+r)^n} = 0, \quad \text{with} \quad r > 0$$

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[7] The Brennan type analysis assumes that all firms are taxed identically. In the analysis at this point, this is not necessarily the case, so that we have to make one of two assumptions: Either all firms are subject to identical corporate tax rates or the differentials in (7) and (7′) are conditional upon firm j's corporate tax rate (i.e. ∂Pj/∂Dj ts, where Tj is the corporate tax rate for firm j).

The result is that the effective cost will be the gross amount; the calculating formula for the cost of capital in this case would revert to that of model (5). Thus, when determining the cost of capital for a particular firm, its mainstream corporation tax position should then be analysed in order that the appropriate dividend variable for inclusion in model (5) is selected. In an efficient capital market, market prices will unbiasedly and speedily reflect all available information (see Fama, 1970 for a review of the theory and empirics of the efficient capital markets hypothesis to that date). If the market is efficient in the 'semi-strong' form, then market prices will reflect the tax position of the firm as disclosed in the published accounts. When it becomes apparent to the market that a firm is not able to recover its ACT against its tax liability, the share price should adjust for a real change[8] in the position of the firm. Thus, a mis-specification of the dividend variable will lead to the computation of erroneous costs of capital.

IV Conclusion

The imputation system was introduced with the intention of stimulating investment through the removal of the barriers to distribution which existed under the classical system. Unfortunately this objective has come into conflict with the need to alleviate the taxation of artificial profits brought about by the interaction of inflation and historical cost accounting. The introduction of 100% First Year Allowances and, more recently, Stock Appreciation Relief has caused taxable profits generally to be reduced so far below the level of accounting profits that in some cases one of the key features of the imputation system, the ability to set off ACT against the corporation tax liability, has been subverted.

When expectations concerning the continued existence of Stock Appreciation Relief were uncertain, such ACT as could not be set off was treated as a reduction of the deferred tax liability, which simply increased the lag effect. Now that Stock Appreciation Relief has become permanent such tax must, in many cases, be written off as irrecoverable. When this occurs, the bias against dividend payout is reintroduced and, as was demonstrated in model (7), the tax system will only be neutral when the weighted capital gains and income tax rates are equal—the situation present under the 'classical' system.

If changes in dividend policy do provide signals to the market, as suggested by Miller and Modigliani (1961), dividend restraint will reduce a firm's flexibility regarding its distribution policy. That is, the percentage increase in dividends allowed becomes a 'target' increase and any shortfalls will have an adverse information content. The introduction of this target level will impose an incremental cost upon firms—the cost of ACT written off as irrecoverable.

As a result of the differing tax situations amongst firms, analyses involving dividend variables will require an investigation of the tax position of the particular firm. This would arise in determining costs of capital, as already argued, and in cross-sectional studies of dividend effects. In the latter case, the heterogeneity of the relevant dividend variable would introduce the need to partition the sample into sub-cross-sections of firms with similar effective costs of dividends. Furthermore, in time-series studies of dividend policy (see Theobald, 1978), the relevant dividend variable will be heterogeneous among firms, introducing not only problems in determining relevant dividend variables, but additionally, posing problems of interpretation of cross-sectionally aggregated results. Furthermore, the dividend variable may not only be heterogeneous cross-sectionally; given the changing tax situation of the company, the relevant dividend variable for a particular firm may also vary through time.

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[8] See Ball (1972) for a discussion of real effects in an accounting and capital market context. The share price change will be due solely to this real effect, there being no change in the 'quality' of the information set.

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Can a Corporation Tax Under an Expenditure Tax Régime be Non-distortionary?*

Graeme Macdonald

The retention of a corporation tax under an expenditure tax régime is justified in the Meade Report[1] on the ground that it can raise revenue while not distorting the rate of return to saving. As such it would not be inconsistent with an expenditure tax regime. The purpose of this note is to suggest that it is impossible to satisfy both these conditions simultaneously; to conclude that the implication of this is that corporation tax should be abolished altogether; and to argue that the burden of such a tax would, if introduced, fall on non-investing taxpayers.

It will be recalled that the Report offered two bases for a neutral corporation tax. Under the R base, net real investment attracts a tax credit regardless of the source of finance, and there is a tax charge on net real disinvestment regardless of whether distribution is in the form of interest or dividend. Under the S base, a tax credit or tax charge arises on the net inflow or outflow respectively to equity finance. In a world of certainty such a tax, while not being distortionary, would not under either base raise revenue:[2] government would borrow to finance the tax credits, would receive the market rate of return on its investment and would pay interest at that rate on its borrowing. However, there is said to be a case for retaining the tax in an uncertain world where government can share in the pure profits: government receives the market rate of return to risk on its investment but only has to pay the risk free rate on its borrowing. The tax is thus said to be neutral and to raise revenue, the revenue being a proportion, the tax rate, of the pure profits.

We assume all individuals to be risk averse and take by way of example a single period project as representative of both the corporate sector and the capital market. This is depicted in Table 1(a). The riskiness of the project is the undiversifiable risk available to the capital market, and the finance structure represents the total market holdings of risk free securities (debt) and wholly risky securities (equity). Assuming limited liability, the project is financed by risk free debt of an amount

$$\frac{K+q}{1+rf} \quad \text{or} \quad \frac{cq}{1+rf}$$

where

K = the total finance required;
q = the lowest probable outcome of income before interest;
cq = the lowest probable cash flow outcome;
rf = the risk free rate of interest.

The returns to equity, given rf of 10%, are shown in Table 1(b). The argument supporting the corporation tax is set out in Table 2. Under the R base, tax is 50% (tax inclusive) and it is assumed that the same corporate gearing ratio is maintained (in order to avoid complete debt finance which would arise if debt remained at its pre-tax level). Under the S base, tax is 100% (tax exclusive) and the pre-tax level of debt is retained so that the same level of real investment is realised.

On the face of it, the corporation tax does, under both bases, raise additional revenue of the tax rate times the pure profits, without acting as a wedge between the rates of return to production

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[1] *The Structure and Reform of Direct Taxation*, Report of a Committee chaired by Professor J. E. Meade, 1978, pp. 230–235.

[2] Except insofar as imperfect markets allow returns above the market rate of return.

Table 1

(a) *Returns to corporate production (no tax) on an investment of 200*

	Distribution of equally probable returns					*Expected value*	*Standard deviation*
Income	−90	5	30	55	150	30	
Cash inflow	110	205	230	255	350	230	
Rates of return %	−45	2.5	15	27.5	75	15	38.76

(b) *Returns to corporate equity of 100 risk free 10% debt (no tax)*

	Distribution of equally probable returns					*Expected value*	*Standard deviation*
Income	−100	−5	20	45	140	20	
Cash inflow	0	95	120	145	240	120	
Rates of return %	−100	−5	20	45	140	20	77.52

Table 2

		No corporation tax	*Corporation tax* R Base 50% t_i	*Corporation tax* S Base 100% t_e
Personal sector:				
t_0	Saving			
	Corporate debt	100	50	100
	Corporate equity	100	50	50
	Government debt		100	50
t_1	Cash inflows			
	Corporate debt	110	55	110
	Corporate equity	120	60	60
	Government debt		110	55
		230	225	225
Corporate sector				
t_0	Debt	100	50	100
	Equity	100	50	50
	Tax credit		100	50
	Investment	200	200	200
t_1	Cash inflows	230	230	230
	Corporation tax	—	115	60
	Debt + interest	110	55	110
	Equity + dividend	120	60	60
		230	230	230
Government sector:				
t_0	Personal borrowing		100	50
	Tax credit		100	50
t_1	Corporation tax		115	60
	Repayment + interest		110	55
	Surplus		5	5

and saving. Table 1(a) shows that the overall expected rate of return to production is 15%, while Table 1(b) divides this into a certain rate of return of 10% to certain production and a wholly risky rate of return of 20% to wholly risky production. Table 2 shows that the after tax rates of return to corporate riskless debt and corporate wholly risky equity are 10% and 20% respectively.

However, the question of whether or not the tax is neutral cannot be decided only by reference to the corporate sector. The overriding concern is whether the tax discriminates between present and future consumption in general,[3] and in order to discuss this we must have regard to the whole of the capital market as depicted by the personal sector in Table 2. Now the total returns in the personal sector to debt (ostensibly certain) are 165, yet we have already established that the only certain cash flow from production is 110. The returns to debt from the corporate sector are indeed certain in that they are covered in the event of the worst possible after tax cash flow outcome ($cq(1 - t)$). It is the returns to government debt, financed by the corporation tax, which are uncertain.

Under the S base, returns to debt (110) are tax deductible so that the tax rate in respect of cq (110) is effectively zero. The returns to equity and, given that the S base has reference to equity only, to corporation tax are wholly uncertain. The returns to government debt in the personal sector are thus also wholly uncertain. Government debt should have been offering an expected rate of return ($\bar{r}$) of 20% with a risky coupon rate (r) of 140%, giving expected returns to 50 debt of 60. In this case there would clearly be no revenue. Alternatively, if the government does not offer its debt on these terms, the corporation tax is equally clearly driving a wedge between the rates of return to production and saving, reducing the 20% expected rate of return to wholly uncertain production to an expected rate of return to wholly risky saving of 10%. In other words, the tax is having the same effect as any tax on income from capital.

The R base gives a similar result. Here, where there is no interest deductibility, $cq\ (1 - t)$ is 55, matching the returns to debt. However, in contrast to the S base, the tax base has reference to the total returns from production, so that the returns to corporation tax are on average as risky as the returns to production. Government debt, being equally risky, should have been offered at an $\bar{r}$ of 15% with r set at 75%, giving expected returns to 100 debt of 115.

The conclusion from this simple example is that a corporation tax of the type proposed must either distort the rate of return to saving or raise no revenue.[4] A tax which is neutral and does not raise revenue must be inefficient because of the dead loss of administrative costs, and one which reduces the rate of return to saving is, in the context of an expenditure tax regime, inconsistent. In that context corporation tax should therefore be abolished.

However, what if a corporation tax of this type is introduced with government offering risk free returns on its borrowing? To do this, government must have an expected certain tax base which will provide, with average tax rates of less than 100%, cover for those possible outcomes which are themselves insufficient to cover government borrowing. Assuming this to be so, the supply of risky securities in the market will be reduced (through the government's introduction of corporation tax) by a proportion equal to the tax inclusive rate. Simultaneously there will be an increase in demand for risk free borrowing, again through government. Assuming a perfect capital market the results of these forces will be an increased equilibrium risk free rate and a decreased equilibrium rate of return to risk.

This process is shown in Figure 1. We retain the assumption that a single period project is representative of all productive and lending opportunities so that the supply of capital remains constant. The relevant variables are thus the expected rate of return and the standard deviation (σ), shown on the vertical and horizontal axes respectively. OD is the risk free rate of interest (available on debt) prior to corporation tax, and OA the risk attaching to equity with OZ the rate of return to that risk, given the single corporate sector project. The line DE represents the expected rates of return available to portfolios of debt and equity, those rates being averages of the rates OD and OZ weighted according to the proportions of debt and equity in the portfolio. The point P represents the aggregate of all individual portfolios, that is the market portfolio, and corresponds to the risk and return of the corporate project since this is the only opportunity open to the market. The indifference curve IP represents aggregate investor preferences and is tangential to DE at P.

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[3] This is particularly relevant in the context of the Meade Report which was concerned to produce an overall coherent tax structure.

[4] This is really only an example of the proposition that the value of a company should not be increased by issuing debt.

With the introduction of the corporation tax the composition of the market portfolio changes, containing more debt and less equity. The corporate sector project, assumed to remain unchanged, will also be financed less by debt and more by equity in order that the higher interest charges may be covered and remain riskless. The rate of return and the risk[5] to equity will thus both fall, so that the new market portfolio will be less risky than the original portfolio. However, whatever the new equilibrium risk free interest rate, it must still be possible to hold a portfolio of debt and equity in the same proportions as now finance the project, such a portfolio experiencing the same risk and rate of return as the project itself. The new market line must therefore run from the vertical axis (giving the new risk free rate) through P; and since the rate of return at P, (OX), is a rate of return on a risky portfolio, the new equilibrium risk free rate must be less than OX, for otherwise there would be no reason for risk averse investors to hold equity. The new market portfolio must thus lie at some point Q in the triangle DPX, that point lying on an indifference curve IQ and being the point of tangency with the market line. The

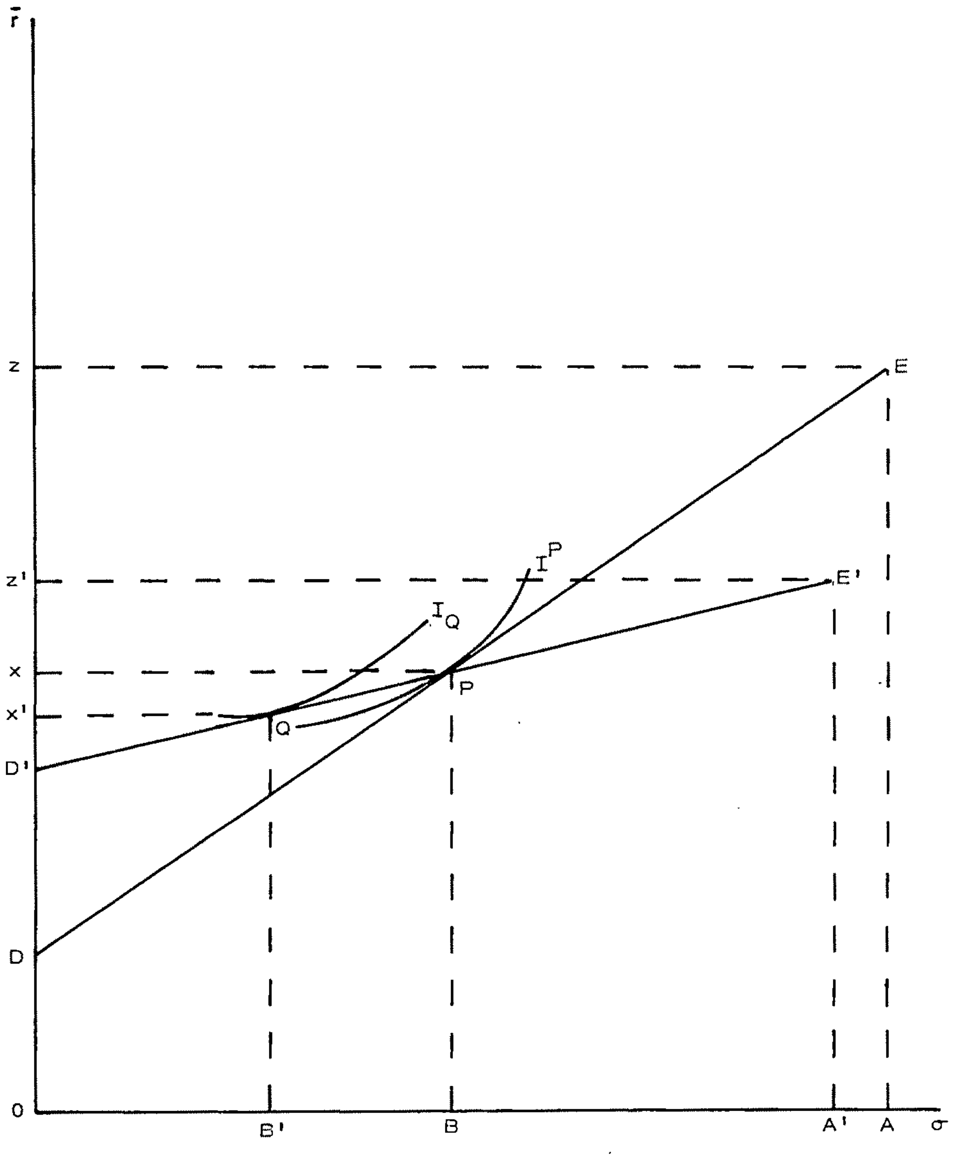

Figure 1

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[5] This is because, although the expected value of the rate of return to equity will fall, the worst possible outcome must always be −100%, so that the dispersion about the expected value will reduce.

line PQ may be extended to the vertical axis at D′ to give the new risk free rate of interest and beyond P to E′ to give the new rate of return OZ′ and risk OA′ for equity.

Assuming transitivity, we know that IQ cannot cross IP and therefore that IQ must be to the north-west of IP. It follows that aggregate investor utility must have been increased by the introduction of the corporation tax. Further, we know that there must have been a loss of utility to the taxpaying public at large. They now have expected returns (say in the form of tax cuts) in face of the risk that future tax rates may increase; but the returns to risk are now less than those which were originally available before corporation tax and which were even then unacceptable.

We can thus conclude that, since the effect of the tax has been to force a move away from the original first best equilibrium, the new equilibrium will in aggregate leave individuals (investors and taxpayers) with less utility. However, non-investing taxpayers are worse off but investors, qua investors, are better off. It must be doubtful whether this perverse result would be a declared objective of the corporation tax.

Book Reviews

Accounting Thought and Education: Six English Pioneers. *J. Kitchen and R. H. Parker.* Institute of Chartered Accountants in England and Wales, 1980. vi+ 120 pp. £5.95.

This short but interesting and valuable book sketches the lives and careers of Guthrie, Pixley, Fells, Dicksee, Cutforth and de Paula. The first four were among the earliest pioneers in accounting and they were born between 1841 and 1864. One-half of the text is devoted to them. Cutforth and de Paula belong to a later generation.

The introduction gives a brief history of the profession and mentions the major areas in which these leading thinkers and practitioners made their contributions. It also indicates the unrecognised impact of World War I on the development of accounting thought. The remaining six chapters describe in detail the family background, careers, interests and major contributions to accounting theory, practice and education of these historical figures.

The purpose of the book is partly descriptive and the authors succeed in presenting lively and fascinating biographies. But there is another purpose, which Kitchen and Parker state this way:

> We need to remember, amongst other things, that the accounting profession's very success ... has been inclined to isolate many successful specialists ... with the effect that lessons learned by individual leaders ... have often ... not been readily communicated .... There have been important truths, hardly won, which have been lost and have had to await re-discovery in later periods.

Thus, Guthrie (1841–1904), who took part in the founding of the profession in England and in the United States, wrote on the question of uniformity in accounts in 1882, the going concern principle and depreciation in 1883 and, in 1886, he argued, in effect, that valuation at original cost less depreciation leads to greater accountability: 'by the new order [a quinquennial valuation] the points of the true history of the financing ... is destroyed by the introduction of a fiction' (p. 17). This basic argument is similar to Ijiri's more recent position on historical cost.[1]

Pixley (1852–1933), author of the first text on auditing, emphasised the legal aspects of accounting. He was not a theorist but, as the chairman of the Library Committee of the ICAEW for forty years, he was concerned with research and scholarship. In this connection, Kitchen and Parker uncover a quotation having a direct bearing on the communication of ideas in accounting. They point out (p. 29) that Pixley did not agree (fortunately!) with an 1894 statement that any book over twenty years old was not worth saving. This disdainful attitude towards the past still exists in some circles, *e.g.*, the statements of the Financial Accounting Standards Board generally contain few, if any, references.

Fells (1858–1925) was co-author of *Factory Accounts* in 1887 and a pioneer in costing. Notwithstanding this classic English treatise, Dicksee once sarcastically remarked that:

> Costing, although it may be supposed by some to have been invented in the United States and brought into this country after the outbreak of the war by an American accountant for the benefit of Government Departments, has of course been in existence, at all events in this country, for almost countless years past.[2]

Dicksee (1864–1932) began his teaching career at the University of Birmingham in 1902 and retired from the London School of Economics in 1926. His most influential book was *Auditing*, first published in 1892 and reprinted in nineteen editions. While Kitchen and Parker refer to most of Dicksee's work published in book form, they do not make reference to many of his papers published in *The Accountant* and *The Accountants' Journal*. Even though the book's main objectives are biographical, not bibliographical, some reference to these papers is needed to indicate that one of Dicksee's major contributions was in the area of information systems. He wrote extensively in his mid-career on office machinery and its impact on behaviour, business organisation and efficiency. Dicksee also predicted the revolution in information processing that we are now witnessing.

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[1] Y. Ijiri, 'A Defense for Historical Cost Accounting,' in R. R. Sterling, ed., *Asset Valuation and Income Determination* (Lawrence, Kansas: Scholars Book Co., 1971), pp. 1–14.

[2] 'Costing,' *The Accountants' Journal*, November 1922, p. 388.

Cutforth's contributions (1881–1958) were in the area of amalgamations and he was concerned with three forms: pooling agreements, acquisitions by a parent or holding company and complete amalgamation. He also wrote on foreign currency problems and was responsible for broadening the curriculum in accounting.

Finally, de Paula (1882–1954), who, like Dicksee, occupied a chair at LSE and wrote a book on auditing, also contributed to accounting thought in the area of large-scale administration. During the war, de Paula was a lieutenant colonel, and in 1930 he became Chief Accountant and then Controller of Finance of Dunlop Company. The authors quote de Paula's 1925 comment that the legal position of the auditor is peculiar because his 'advice and opinions [are] available to the management, whom he does not represent, but [are] not fully available to the shareholders, whose agent he is' (p. 89). Kitchen and Parker point out that this remark has a 'modern ring.' But it also has roots in the past, as the following comment from the October 27, 1883 issue of *The Accountant* shows:

> The audit of Public Companies' accounts was designed to control and check the action of directors in their administration of the affairs of Public Companies; and yet, as a rule, the auditors who are chosen for this purpose owe their employment to the very directors whom they are presumed so to control and check in the interest of the shareholders.

One can only wonder in how many generations this point will be made.

In the preface the authors record their special obligation to successive editors of *The Accountant*. Indeed, this weekly publication was, without a doubt, the best single source of historical information on accounting in the last quarter of the ninteenth century and in the early part of the twentieth. Its pages were informative, its editorial style was critical and its correspondents, like the author of the poem about the sale by Dicksee of his practice at Cardiff to Mr. Price and his marriage to Miss Plumbe, seemed to enjoy the profession's formative years (*The Accountant*, September 8, 1894):

Dicksee has left his business for a Price,
  And up from Cardiff has to London come,
To find another partner in a trice,
  A partner who is sure to prove a Plumbe!

New York University — Richard P. Brief

Accounting Standards Committee. *Accounting for Goodwill: A Discussion Paper*, 1980. 43 pp. £2.

Arguably one of the most important topics in financial accounting is goodwill. It tends to represent in practice all that the reporting accountant cannot easily measure and report in financial terms, yet it must often constitute the single most valuable 'resource' of the business enterprise for reporting purposes.

Its intangible qualities usually prevent it appearing within the accounting system, except in circumstances in which it has been the subject of a purchase or sale transaction. This means that goodwill is usually accounted for only on an *ad hoc* basis, and a great many business enterprises may therefore never have to consider the problem of how to account for it.

The vexed nature of goodwill makes it wholly unsurprising that few professional pronouncements have appeared regarding its treatment for reporting purposes. In fact, within the UK, no attempt had been made until the publication of this ASC discussion paper, and this has only come about because of the EEC Fourth Directive which prescribes the writing off of purchased goodwill in the unconsolidated financial statements of a single company over a period not exceeding five years. Goodwill on consolidation is therefore not considered, and this appears to limit the discussion paper to a relatively small and unimportant part of the overall problem.

The recommendations of the ASC panel on goodwill are relatively few, and can be summarised as follow: (a) purchased goodwill should be treated as a fixed asset but should not be kept permanently in the balance sheet of the acquiring enterprise; (b) if there is a permanent diminution in its value, it should be written off immediately to its estimated recoverable amount; (c) otherwise, it should be amortised over its useful economic life; and (d) the latter period should not exceed 40 years. Useful economic life is defined in the paper as the number of years for which the value of the stream of distributable income arising from the acquisition of a business is material in relation to the price paid for such an acquisition. From working through the example given in the paper, this would appear to represent the number of years which the anticipated distributable income from the acquisition would be discounted over in order to equate with the price paid (allowing for a 10% margin of error)—that is, the number of years of distributable income purchased. The recommended formula is stated to be

2.5 times the price-earnings ratio at the date at which the goodwill was acquired.

It is further recommended that negative goodwill (or 'badwill') should be gradually transferred to the profit statement, and the unexpired amount disclosed under liabilities in the balance sheet. Existing goodwill should be written off to reserves to the extent that it should have been amortised to date (following the formula stated in the paper). The unexpired amount should then be amortised in the recommended way.

The paper thus contains what is an exceedingly complex series of recommendations, and raises a number of important issues, none of which is adequately discussed. There is obviously little space in this review to do anything but mention the more serious areas of contention in the hope that interested readers may pursue them in greater depth:

(a) The booklet is described as a discussion paper but provides little discussion. It prescribes and recommends in a way which, unfortunately, has become all too typical of the ASC. It is hard to see how the recommendations have been arrived at.

(b) It is impossible to see how purchased goodwill can be examined without also looking at consolidated goodwill. Indeed, the panel specifically states that it sees no difference between the two. Thus, it has appeared to prejudge the issue of consolidated goodwill, for presumably the same recommendations will be applied to the latter if there is believed to be no difference.

(c) The usual approach to accounting for goodwill has been adopted—that is, the negative one of looking for ways of getting rid of it from the accounting system by means of some form of write off. Nowhere in the text is there any attempt made to consider the alternative philosophy that the importance and value attributable to goodwill in financial statements could necessitate its constant presence in the latter, and the requirement periodically to revalue it.

(d) Following on from (c), it would appear that the problems associated with the writing off of goodwill are no different from the problems associated with revaluing it (that is, evaluating future flows, useful economic life, etc.). Why then should write off be considered more appropriate than revaluation? Why should tangible assets be revalued (under current cost rules, for example) and intangible assets be eliminated? The lack of logic in these procedures is puzzling to say the least.

(e) The recommendation concerning amortisation of goodwill is obviously going to be the major point of debate in the paper, and would appear to be a reasonable way of determining the total estimated life of the purchased goodwill—that is, in a present value sense, the acquisition value reflects a number of years of purchase of future income. However, nowhere in the discussion paper is there any guidance as to how the amortisation is to take place over that period. There is an implication in several places that this might happen on a straight-line basis which, if it is the case, assumes that the loss of value is a constant factor. Much obviously depends, however, on the stream of distributable income underlying the valuation and, presumably, if cognisance is to be taken of the latter in the process of amortisation, then the present value of goodwill would require to be calculated at the end of each accounting period. Such a policy would also allow for actual distributed income being different from estimated income, and for estimates to change over time as the points of realisation came nearer the points of estimation. It would also be of benefit in aiding the reporting accountant to determine when there is a permanent diminution in the value of goodwill which demands an immediate write off to the profit statement. But the paper does not discuss these matters, and leaves the amortisation policy as a half-baked one.

(f) No specific statement is made as to where the amortised amounts are to be written off. The implication in several places in the text is that it should be the profit statement but whether it should be treated in the same way as fixed asset depreciation or as an extraordinary item is unclear. It ought not to be left in this fashion.

(g) In some ways, it is alarming to see the ASC respond in such a manner to EEC legislation. The practice recommended in the paper is reasonably compatible with the Fourth Directive, but whether the latter is sensible in its treatment of goodwill is never discussed. Surely the UK tradition in financial reporting is sufficiently good to warrant a somewhat less submissive role *vis-à-vis* Brussels?

This is not a discussion paper. It lacks the depth to be treated as such. It avoids important issues, and presents half-solutions. It does little to advance accounting thought or practice.

University of Edinburgh T. A. Lee

Accounting Theory. Text and Readings. *L. D. McCullers and R. G. Schroeder.* John Wiley & Sons, 1978. 577 pp. £11.

The authors begin this book by stating that while general agreement on a theory of accounting has yet to be reached there are certain concepts and principles which have a degree of general acceptance. The objective of the book is to build on the identified accepted principles or practices and to provide the student with a framework within which to operate by discussing various aspects of financial accounting and expanding upon these topics by including in the book readings directly connected with each of the topics covered. In essence, the book is primarily a descriptive interpretation of the opinions and standards issued by the Accounting Principles Board and the Financial Accounting Standards Board together with reports and articles from various other accounting groups or individuals. In this manner the authors hope to expose the student in summary form to the 'official theory of accounting' while at the same time enabling him to acquire a broader, and usually more theoretical, view of the financial reporting process.

The book is divided into 14 sections. The first deals with the source and methodology of accounting principles. It outlines the structure of the profession in the United States and the system of operations of FASB and additionally discusses research methodology in accounting. (The British users of this book will thus be provided with a detailed outline of the system of standard setting in the United States.) The authors then turn to one of the most controversial aspects of accounting theory today—income concepts. This section is unfortunately brief. It gives a sketchy account of various concepts of income and follows with three well known articles—on the comparison of accounting and economic concepts of business income by Mitchell (which somewhat strangely makes no reference to Edwards and Bell); on the realisation concept by the AAA; and on the critical event and recognition of net profit by Myers.

The income statement is treated as briefly as income theory. One chapter suffices to discuss the format of the income statement, the concept of consistency, and special problems in income statement presentation, i.e. (rather oddly) disposal of a segment of a business and interim financial statements. Articles follow on calculating earnings per share, the impact of APB No. 20 which deals with changes in accounting policies, and the implementation of APB No. 30 which deals with such matters as extraordinary items. The following eight chapters deal mainly with balance sheet items and discuss working capital, long term assets, investments and intangibles, income tax allocation, leases and pensions (anything which helps to interpret FASB 13 on leases must be useful!), long term liabilities and equity. The discussions of the proprietary and entity theory by Lorig contained in the equity section of the book presumably led the authors to the general purchasing power versus current value debate. A brief history of the debate is given followed by a description of the application of current purchasing power methods. A short discussion on entry values, exit values and economic value concludes the authors' contribution to this section. Two articles, however, by Edwards and by Chambers help to add substance to the discussion which, once again, is disappointing in its limited nature. The final two chapters deal with issues which are very topical in the international accounting world. The penultimate chapter considers combinations, consolidations and translation of foreign currency—the profession's views on the latter subject have, however, altered considerably since the book was published. The final chapter on financial reporting and disclosure requirements considers the efficient market hypothesis and the recommendations of the official bodies for disclosure policy.

The book in many ways is a strange mixture. It contains some basic material, presumably for the undergraduate in the early stages of his career, some classic articles which have made a major contribution to the advancement of the subject, and interpretations of official American accounting pronouncements. Its use in the United Kingdom would be for those interested in reporting internationally and for those courses, University or Polytechnic, concerned with international accounting. It is more a book for a library than for individual students. It does help, however, to clarify the position in the United States regarding many aspects of financial reporting and, as such, is worth having for reference purposes.

Edinburgh David Tweedie

Property Valuation and Accounts. *C. A. Westwick.* Institute of Chartered Accountants in England and Wales, 1980. ix + 122 pp. £6.50.

The aim of this book is to explore the problems associated with incorporating a valuation of its property in the annual reports of a manufacturing or trading company. This search is intended to increase the understanding of businessmen, accountants, auditors, valuers, and users of published accounts of each others' needs and problems in this area. It is hoped that extra utility will, as a consequence, attach to published accounts.

Chapter 1 addresses itself to discovering what the users of published accounts want from property valuations. Chapter 2 deals with the approach of accountants and auditors to property valuation for balance sheet purposes with significant emphasis being placed upon the treatment they accord to depreciation. The valuer's approach to the valuation of property for balance sheet purposes is dealt with in chapter 3, while the relationship between the work of valuers and accountants in this area is the subject matter of chapter 4. The needs and problems of users of accounts in relation to property valuation are examined in chapter 5. Finally chapter 6 embraces the conclusions and recommendations that flow from the study. Much of the material the book contains is relegated to appendices, the more substantial of which contain various accounting standards and guidance notes emanating from the Royal Institute of Chartered Surveyors.

The author tells us that the book is largely based on the material he prepared for, and the discussions which took place at, a one day seminar attended by members of a firm of chartered accountants and a firm of chartered surveyors. Its main weaknesses flow from this origin. A trivial example of this is that an appendix is included which contains the names of those attending the seminar. While no doubt gratifying to those involved, it would seem to hold no significance for the general reader.

More substantially the structure of the book seems to have been influenced by this origin. Some of the chapters are extremely thin (chapter 4 running to only three pages and chapter 6 to four). The impression given is that the book is little more than a hurriedly extended seminar paper. As a consequence it smacks of incompleteness. For example, despite the fact that it is limited to the valuation of property for the annual report of a manufacturing or trading company, no attention is paid to the difficulties which arise when such companies hold real property overseas.

The problems faced by financial institutions, such as banks and insurance companies (who while not property companies, have large holdings of realty), are not touched upon and the work has no historical perspective. Surely the author could have referred to some of the more dramatic takeover bids of the 1950's in his attempt to convince us of the need to revalue property. The impression of haste and incompleteness is reinforced by a study of the appendices. Although the regulations emanating from the Accountancy bodies, the Stock Exchange and the Royal Institution of Chartered Surveyors, in so far as they deal with property valuation for balance sheet purposes, are reproduced in full, the relevant parts of the Companies Acts find no place. This can do little to aid the understanding of non-accountants. It would also greatly improve the book if a much greater attempt had been made to explain the thinking underlying the regulatory material which is so liberally reproduced. For a book which has as its avowed aim the improvement of understanding between various professional and user groups, it is just not good enough merely to reprint many pages of such documents.

Much more serious than these defects is the almost total omission of references to the work of economists. 'Value', after all, is an economic concept and economists have a great deal to say on this topic. Evidence of this exists in the book itself. The one substantial reference to the writings of economists is a short extract from R. Turvey's *The Economics of Real Property*. This says more useful things about the contentious subject of the division of a property value into that part attributable to the building and that part attaching to the land than the whole of the remainder of the book. It is surely not too much to ask of a work devoted solely to the valuation of real property in accounts that this division called for by SSAP12, and the consequent different treatment for depreciation purposes of land and buildings, should receive extensive and critical discussion. True, the author concludes that this apportionment should be abandoned but only on the tame ground that 'It would be a considerable simplification and save time and money' so to do.

The book does contain some useful new data. For example chapter 5 has some helpful information on the level of valuer's fees and chapter 2 details the results of the author's research into the practice of companies regarding property revaluation. Some of the conclusions arrived at are also valuable (e.g. the need to strengthen section 16 of the Companies Act 1967) although it would help if the author had indicated the relative significance he sees attaching to his various suggestions.

In conclusion it is probably the case that the book goes some way towards meeting its objective of improving understanding between the various groups specified. It could, however, have achieved considerably more had it been a work hallmarked by thoroughness. It is not a book which can readily be recommended to students and its value to practitioners may well be small.

University College, Cardiff E. A. French

Retailing: Management Controls and Performance Improvement *N. A. Highton and D. L. Chilcott.* Institute of Chartered Accountants in England and Wales. 1980. xi + 227pp. £14.95.

This is a volume commissioned by the ICAEW in its series 'Industry Accounting and Auditing Guides', and has been jointly written by an independent management consultant and a partner in Ernst & Whinney.

There is no coverage of services, so anyone interested in the 'retailing' of financial services, TV rental, travel facilities, or dry cleaning will be disappointed. One might also be rather disappointed with a number of other aspects of the book, including its high price.

The title is something of a misnomer since much of the content is relatively straightforward accounting material (e.g. ch. 7 on accounting presentation, ch. 8 on inflation accounting, ch. 11 on taxation) that has only incidental relevance to retailing. Of greater significance, perhaps, is the questionable relevance of the sub-title since the controls that are discussed tend to be 'operating' and 'internal' rather than 'management', and only one brief chapter focuses on performance measurement/improvement. This point is emphasised further by the absence of a control framework. (Indeed, there is no conspicuous logic to the arrangement of the 12 chapters making up the book, and they are certainly not structured in accordance with a management control perspective.)

Any reader of this book might reasonably be excused if he experiences some confusion over the target audience. This is specified to comprise proprietors and general managers of retail businesses, department store executives, auditors, and professional accountants. A varied group to be sure, and the likelihood of being able to relate meaningfully to each subgroup's particular needs would be slim for the best of books. This one seems to be addressing retailing policy makers one minute, shop assistants the next, then the professional accountant, and so forth. Some chapters (e.g. ch. 9 on auditing) appear to be clearly directed at one sub-group, but too many others are attempting to address themselves to the entire group—and probably failing to reach any sub-group successfully as a result.

Each chapter is made up of numbered paragraphs (and entries are included in the modest Index by paragraph reference rather than by page number). This does not always make for easy reading. More crucially, the style of the book tends to be *assertive* rather than having its basis in logical argument with appropriate empirical support. (Examples of this tendency are to be found in the presumably mystical process by which a ... 'business grows, as it surely will under the management of a talented entrepreneur ...' because the authors do not tell us *how* this comes about. Also, we are told that '... management must decide on the information it needs...' but no clue is given as to *how* this is to be determined. Magic again must provide the means whereby '... management will be able to arrive at a fair allocation of costs...' since the book itself fails to inform us *how* to achieve this.) Insofar as there is an empirical element in this volume it is to be found in the range of specimen forms that are used to illustrate a number of procedural matters and which are drawn from those in use in two department stores, plus, of course, the authors' combined experience.

Coverage is enlightened in some places (such as in relation to the implementation/operation of budgetary control; in relation to the importance of accounting in terms of current costs or current worth which is stressed through much of the book; and in relation to presenting a case to raise funds), but almost wholly deficient in others (such as the absence of a control framework and the minimal treatment of performance measurement/improvement). There are several matters that one would expect to see dealt with in much greater detail than the odd paragraph that they receive, including: capital budgeting aspects (and discounting methods, the understanding of which on the part of the reader seems to be taken for granted by the authors in what is otherwise an elementary book); EFTS; materials handling; product (and product mix) profitability (rather than just departmental profitability which receives most emphasis); and cost analysis and apportionment. In addition, the reader would be helped by a clearer statement of the problem set that the authors are addressing in order that he might gain a better view of the interrelationships that exist amongst the problems of retail control on the one hand and the controls themselves on the other.

In terms of using the book there is scope for improved cross-referencing (e.g. occupancy costs are briefly introduced on p. 56 but one needs to find the fleeting reference on p. 92 to imputed rental values if one wishes to gain a fuller picture, and one is not helped in this by the absence of cross-references). Amongst the organisations mentioned in ch. 6 ('Outside Help') it is a little surprising not to find any mention of either the College for the Distributive Trades or the Distribution Industry Training Board. The Glossary (Appendix C) is mainly made up of retail terms and, like the Index, is brief (excluding, for example, in both cases, such basic terms as 'cost'—in any of its forms, 'allocation', and 'apportionment').

There is a short Bibliography (Appendix D) containing 20 or so references to finance books/booklets. It is disappointing to find no reference at all to texts/articles on accounting for retailers (or retailing for accountants) since this suggests a failure in securing genuine interaction and communication. Within the body of the book there is only one reference cited (to the ILO's guide to *Management Consulting* on p. 116), so whilst the ICAEW is to be applauded for its initiative in sponsoring this book, it is sad to find that the opportunity to compile a relevant introduction to the limited amount of published material in this field has been totally missed. For example, on *retail accounting* in general it would no doubt be helpful to the target audience to be made aware of the work of Hicks and Teasdale (1975), Moscarello *et al* (1976), Piper (1977), Price Waterhouse (1979), and Sevin (1965), plus the key contributions on *merchandise management accounting* from McNair and May (1957), Cross (1958), and Jones (1958).

Aspects of *retail performance* are discussed by Cottrell (1973), McCammon and Bates (1977), McClelland (1963, 1966), *Management Accounting* (1979), *Stores* (1974), Towsey (1974) and Warner (1979). Specific issues such as *productivity measurement* in retailing are dealt with in some detail by Bucklin (1977), George (1966), George and Ward (1973), Sevin (1965), and Takeuchi (1977); *budgetary control* in retailing by Dermer (1974), Staples and Swerdlow (1978), and Welch (1973); *return on investment* in retailing by Ahern and Romano (1979), Holton (1961), Oakleaf (1972), Schlacter and Withers (1973), and Tolle (1973); retail *auditing* by Akresh and Goldstein (1978); *financial structure* by Doyle and Cook (1979); *product profitability* by Buzzell, *et al.* (1965), Hoffman and Vaughn (1963), and Sevin (1965); and *profit improvement* in retailing by Sweeney (1973) and Welch (1973).

In summary, this is a limited, somewhat introspective and technical book which has a strong procedural orientation, which is competently written in its technical accounting and auditing sections, but which fails to explain the retailing process and its problems in a way that is likely to facilitate effective control from the viewpoint of either retailers or their accounting advisers. (Indeed, the 'unique' role of the latter is seen as being '... to observe ... progress ... and to issue words of caution ...' which is hardly conducive to purposive management control or improved performance.)

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Introduction to Financial Accounting. *Christopher Nobes*. George Allen and Unwin, 1980. ix + 245 pp. Hardback £12.00. Paperback £4.95.

A plethora of new introductory accounting texts has been produced in the last few years. Mr. Nobes's book is designed for academic rather than professional students, but if it is to succeed it needs to offer some particular advantages over its rivals. What do lecturers and students want from an introductory text?

Those who want a bank of bookkeeping exercises must look elsewhere. Although the book provides numerical illustrations of the main techniques covered in the text there are no further exercises for the student to work through. There is not even a companion work book volume which is now a feature of several introductory texts.

Those who want wider reading around a lecture course will find that, within the rather narrow confines of its title, this book provides a key, but not the material itself. The key is the carefully selected references and further reading listed at the end of each chapter. Other introductory texts exist which include reasonably wide reading material to supplement a lecture course.

The confines of the book are narrow in that it deals only with financial accounting 'and those parts of business finance and management accounting which fit most closely with it'. In fact there are six pages on capital raising, nine pages on valuation of the business and one page on cash budgets. Otherwise the book deals only with financial accounting.

What the book does provide is eighteen concise, straightforward chapters with content equivalent to eighteen introductory lectures. The student who has difficulty with lectures should have no difficulty in following the careful explanations provided by Mr. Nobes who knows where students find difficulties and provides a reliable and easily comprehensible guide through a minefield of potential confusion.

He even manages to explain why assets are a debit but appear on the right hand side of the balance sheet (although his early balance sheets show them on the left!).

Opinions differ on the extent to which the techniques of double entry bookkeeping should be covered in an introductory course. The amount of bookkeeping included in some early accounting degree courses, and the way in which it was taught, cast doubts on the validity of accounting as an academic subject. More recently the pendulum has swung too far the other way and in the search for academic respectability the nuts and bolts of the subject were dropped in the pursuit of theory. But students are unlikely to understand criticisms of contemporary accounting practices, or the subtleties of alternative approaches to accounting for inflation, without an adequate grasp of the basics of bookkeeping. Similarly students find rote learning of bookkeeping difficult and meaningless unless it is explained in a theoretical context. Here Mr. Nobes achieves a good balance. He provides a fairly lengthy exposition of double entry bookkeeping, but does not base his whole book on it, and gives adequate coverage to theoretical matters and the environment within which accounting functions.

After introducing the concepts of value and profit, the book goes on to deal with accounting methods and techniques with chapters on the balance sheet, revenues and expense, depreciation, stock and double entry. There is also a chapter dealing with record keeping including a brief appendix exemplifying the application of computers to accounting.

In common with most introductory texts there are chapters on partnerships and various aspects of company accounting and on interpretation of accounts. The brief chapter on partnerships avoids all complexities but occasionally slips into archaic expression (e.g. '... they may benefit from being taxed to income tax.'). The chapter on profitability ratios treads carefully through the problems and complexities which students find in calculating ratios. The text carefully explains alternative ways of calculating return on capital employed, but the student may be confused by one of the illustrations. The term SI is used initially to represent the total shareholders' interests and then later to exclude the preference shareholders' interest.

As befits a book emanating from Exeter University, and unlike many introductory texts, the subject is set in its historical context, a chapter on international accounting and harmonisation is included, and the subject of accounting under inflation is dealt with. One cannot expect too much from two chapters on inflation accounting in an introductory text. Simplification is essential but occasionally leads to some questionable and potentially misleading statements such as 'the historic cost concept is simple to use and avoids the need for subjective estimates' (page 159).

Mr. Nobes's book provides an introduction to financial accounting which provides a balance of theory, background, technique and interpretation. The more ambitious student will find his references and recommendations for further reading useful. The less ambitious student will find its clarity and brevity more appealing.

Queen's University, Belfast R. W. Perks

Accounting for Advertising Assets. *Dale L. Flesher.* University of Mississippi Bureau of Business and Economic Research, 1979. vii + 97 pages. $5.00.

The problem of allocation of cost to periods of benefit has been recognised and discussed by many writers; it can, of course, be solved in practice by a variety of methods, from the arbitrary to the unnecessarily sophisticated. However clearly the *principle* can be drawn, the direct relationship between expenditure and benefit is often so complex and unpredictable that a conscientiously scientific procedure is seldom, if ever, followed. This is clearly seen in advertising expenditures, where accountants generally make little attempt to carry forward expenditure in anything other than a rough and ready fashion. The difficulty lies not in the accounting procedures, which are relatively straightforward, but in determining and proving a reliable relationship between the spending and the benefits for allocation purposes. This book represents a study of accounting procedures based on a statistical analysis of advertising and sales, for two business organisations: Chrysler Corporation and Lydia Pinkham Medicine Company. Data for the former cover the years 1957 to 1972, and for the latter 1919 to 1960. The author, who is associate professor of accountancy at the University of Mississippi, contributes much of interest to accountancy, but perhaps the key factor in his analysis is his discussion of the advertising decay effects (in Chapter IV) and their implications in the cases studied (Chapter V). Earlier chapters contain a general outline of accounting for intangible assets and of the microeconomic effects of advertising expenditures, while Chapter VI contains the author's general conclusions.

One of the difficulties that has to be overcome is that advertising effects are complex, influencing people and products in different ways and in different periods. Dr. Flesher deals with this by describing three different statistical approaches and by recognising that assumed relationships may have to be revised at frequent intervals. The simplest approach is to base decay rates on sample interviews of consumers to assess their level of awareness. More complex but more complete are the multivariate regression models, where sales in a given period are calculable from a combination of previous sales levels and recent advertising expenditures; however, the relationships in practice tend to be more complicated than can be handled by the simpler linear models. The most rigorous statistical models seem to be those based on experimental designs where a number of observable variables are put together in a differential equation, as suggested by M. D. Vidale and H. B. Wolfe (*Operations Research*, June 1957); a model of this type can be finely tuned to the situation, but is not very practical and tends to be costly. The author therefore adopts multivariate regression equations for his case studies, comparing his results with those provided by following more generally accepted principles.

The accounting techniques put forward by Dr. Flesher are quite easy to apply once an acceptably accurate relationship between advertising expenditure and benefits has been calculated as above. A Future Advertising Benefit Account is used, topped up (or drawn upon) each year to reflect the differences between actual expenditures and benefits utilised in each accounting period. In some of his alternatives, he discounts the future benefits back to the balance sheet date, but this is not a fundamental requirement. There still remains, as pointed out by the author, the problem of judging whether the net adjusting figure for future advertising benefit can be regarded as entirely applicable to the current year or, at least partially, as an error in previous years, on the possibly frequent occasions when the model is recalculated. The answer to this question is likely to be obscured in practice by a large number of dynamic factors, including obvious ones like product mix. Businesses change and adjust in a continuous fashion, and the slicing-up of their lives into artificial accounting periods is bound to produce compromises and discontinuities in the bases of allocation.

Of course, the method of allocating expenditure over as much as eleven years, as adopted by Dr. Flesher, is somewhat impractical. When the effects of advertising are so long drawn out, the amounts allocated to later years become immaterial, the last six years receiving under three percent (in total) of the original expenditure. It is therefore unlikely that a similar allocative model would be used in practice unless a mathematically tireless computer is used. Similarly, it is unlikely that more than a small proportion of businesses could gather reliable and consistent data over enough years to relate sales and advertising in the way adopted for the case studies. Nevertheless, an adaptation of the Flesher methods could be applied to many businesses, given the computational expertise and the historical data necessary.

This book is undoubtedly useful and thought-provoking. It deals with the capitalising of expenditures in the comparatively short-term, and its lessons could be applied well beyond the advertising area. It brings out problems of matching expenditure and benefits and shows that they can be scientifically solved. It outlines a system which brings selling expenditures into line with manufacturing costs, and thus opens the way to fitting the former into current cost and inflation accounting methods. It is not a unique contribution to the literature, but it is a real one.

University of Dundee Iain W. Symon

A Behavioral Analysis of Joint Cost Allocation and Transfer Pricing. *A. L. Thomas.* Stipes Publishing Company, 1980. xv + 322 pp. $6.

Professor Thomas's work on the allocation problem and, in particular, his conclusion that one-to-many allocations in accounting measurement are incorrigibly arbitrary are widely known, although rather less widely acted upon. Financial accounting practitioners continue to rely heavily on allocations, with at least the minimal excuse that they are necessary to comply with the law; there is a good deal of evidence to suggest that management accountants also continue to make extensive use of allocations in internal reports without this excuse. Perhaps because of their endurance in accounting practice, allocations have recently enjoyed a revival of interest in the management accounting literature. The most fruitful line of development seems to have been the use of game-theoretic approaches based on Shapley allocations.

In the first part of this book, Professor Thomas presents an analysis of a variety of joint cost allocation schemes (including the Shapley approach). The analysis is behavioural in the sense that it examines the impact of allocation schemes on the behaviour of economic actors, rather than because it contributes to empirical behavioural science. The primary consideration in the analysis is behaviour-congruence: 'an allocation method will be *behaviour-congruent* if it reliably encourages actors to act in ways that are consistent with whatever it is that central office can be discovered to want...' (p. 67). A large number of possible congruence properties are examined, including not only those leading to short-run aggregate profit maximisation, but also those affecting long-run planning decisions and perceived fairness (élan effects).

Some of Professor Thomas's tests of congruence are very stringent. For example, one test (property 31) requires that any particular allocation scheme should yield allocations which will be perceived as fair by the standards of other allocation schemes yielding allocations perceived as fair. As long as there are at least two allocation schemes which yield allocations which can be perceived as fair, no scheme can pass this test.

In all, 39 properties are examined and no allocation scheme is behaviour-congruent for more than 21; the winner using crude unweighted scores is in fact the Johnson's Improved Louderback Method (which Professor Thomas himself had a hand in developing), with the Shapley Method coming a close third. Even judicious combinations of methods cannot achieve scores higher than 29 (and such scores ignore the possible damage to organisational morale from the employment of more than one method), although, of course, as Professor Thomas himself points out, crude scores of this kind are an inadequate basis on which to favour one method rather than another.

Professor Thomas concludes that, 'whenever allocation-free decision-making is feasible, behaviour congruence seemingly has no merit beyond rescuing decision makers from side effects of doing something that's unnecessary' (p. 114). The value of arbitrary allocation schemes is that they offer the potential for decentralisation, organisational flexibility and atomistic decision-making; whether the benefits exceed the cost of incongruent organisational behaviour is, as Professor Thomas points out, largely an empirical question, and one on which relatively little research has been conducted.

The second part of the book examines transfer pricing as a special case of joint cost allocation. As with joint cost allocations generally, specific transfer pricing schemes can be devised to achieve behaviour-congruence in particular circumstances. However, sophisticated schemes (especially programming models) devised to overcome sub-optimal short-run decision-making will inevitably have serious dysfunctional consequences for organisational élan and the evaluation of divisional managers. The range of uses to which transfer prices are likely to be put also makes it difficult to specify in advance what congruence properties are desirable.

Should divisionalised companies abandon transfer pricing and hence the calculation of divisional book profits where there is a significant level of interaction between divisions? Professor Thomas is reluctant to urge the abandonment of transfer pricing (and joint cost allocation generally) because there will be circumstances under which it will be preferable to the next best alternative. In the face of the inevitable arbitrariness of transfer prices, however, organisational structures should be designed so as to minimise the extent of inter-divisional traffic; compromise solutions (for example, mixtures of cost- and profit-centres) should be encouraged where necessary; where transfer pricing is necessary, divisions should be given approximately equal bargaining strength and invited to negotiate prices; above all the development of transfer pricing schemes should be seen as a pragmatic task rather than the search for an ideal.

Professor Thomas's survey of the literature of transfer pricing is extensive, and his conclusions are sharpened by the use of his analysis of the allocation problem. Many of his arguments about the limitations of transfer pricing are accepted in the critical literature. Perhaps the most useful part of his work is the demonstration that these limitations, far from being restricted to the operations of diversified international megacorporations, actually pervade all but the most primitive forms of economic activity.

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Brian A. Rutherford

Practical Corporate Planning. *J. Argenti.* Allen and Unwin, 1980. viii + 221 pp. £4.95.

John Argenti's book is written for chief executives, very senior executives and non-executive directors of small and medium-sized companies, who are thinking of introducing corporate planning, and require a practical guide with no jargon, no mathematics, and no sophisticated planning techniques. It is a do-it-yourself kit based on a system developed by Argenti and supplemented by considerable practical experience.

Argenti believes that although corporate planning has been in use for many years, it is still the subject of several misconceptions. Some companies try to plan in meticulous detail over very long time spans and confuse corporate planning with budgeting; others, believing corporate planning to be a vast complex exercise, appoint academically brilliant specialists to do planning for them. He argues rightly that long-term planning involves a very few important decisions concerning the whole structure of the company for years into the future, that the plan should be prepared by a team, and that the first step in corporate planning is to form the team. The process—the Argenti System—it is argued is quite simple. The team works systematically through a sequence of questions about its company. The objectives, targets, strengths, weaknesses, and so on are all examined and discussed, until a consensus emerges as to the company's overall strategic situation. Then a decision is made, i.e. a strategy or set of strategies is selected, and action plans are drawn up. Finally the team stands ready to monitor progress every few months.

The Argenti do-it-yourself kit devotes a chapter to each stage in this sequence. Each contains sound practical guidance spiced with Argenti philosophy and anecdotes. Two long chapters are devoted to deciding corporate objectives and selecting targets, including some sound advice on the limitations of financial ratios. The managing director anxious to get on with it might find these chapters a little long-winded, but Argenti argues on the basis of his experience that a large proportion of plans that go wrong do so at this very first stage.

However, unlike many academic texts on corporate planning, the processes that have to be followed at each stage are spelt out and illustrated in some detail in subsequent chapters. While a managing director wishing to introduce corporate planning may not follow in every detail the Argenti system, he will not go far wrong if he adapts the system to his own situation. He might, in today's environment, feel that Argenti could have placed more emphasis on strategic vulnerability analysis and strategies for financial mobility.

Argenti suggests his book might be of interest to management academics and students, and it should be. Those who lecture on corporate planning but have never done it, and their students, should read this book. They may then decide whether they agree with Argenti that corporate plans are simple, not complex; but they should also realise that they are difficult, not easy!

Loughborough University J. Sizer

Improving the Financial Discipline of States and Cities. *David Solomons (ed.).* The Council of Arthur Young Professors, 1980. vii + 160 pp.

This book contains the proceedings of the 1979 Arthur Young Professors' Roundtable. On the whole, this reviewer was favourably impressed by its contents. However, this review starts with a quibble regarding its somewhat disjointed nature. The basic approach intended to be followed in this book is the presentation of papers, followed by the comments of two discussants, with an overview summarising the views presented. This admirable arrangement is followed for the discussion of three of the topics, but breaks down at the beginning and the end of the book, which necessarily leads to an imbalance in its contents. The first paper, 'Accounting Concepts in the Government Sector' by Robert Anthony, was intended to provide a conceptual start. Unfortunately, interesting as this paper is, indeed provocative in parts, it receives scant attention in the ensuing discussion, which focuses primarily on the following paper by Burton on a revised financial reporting model for municipalities. Also, in the final section, the presenter of the main paper chose to address a very specific topic rather than the far broader one which was prescribed. The commentators after brief remarks on the paper presented, take up the main theme of this section. These defects in the structure of this book are accentuated by the absence of an index or a contents page.

However, the keen student of public sector accounting will not be deterred by such blemishes, nor will he be dismayed by what he finds within these pages. The suggested starting point is the appendix, which contains a paper (Edelstein, 'The Fiscal Crises of Cities: An Economist's Perspective') which was distributed before the conference as a stimulus to thoughts on the need for financial discipline in cities. It sets out the recent US experience from the viewpoint of an economist in lucid fashion.

The prospective reader is then confronted with an impressive array of distinguished writers on public sector accounting, including Anthony, Herzlinger, Burton, Pomerantz, Wildavsky and Hay, with contributions from senior practitioners in municipal financial affairs. At this point, the reader should resist the temptation to start at the beginning or even to wander through in search of familiar accounting topics. The most fruitful starting point, in this writer's opinion, is in the review of the economic environment of US municipalities (pages 119–137). This builds on the essential background provided by Edelstein's paper to give insights for which parallels can be drawn with the UK. The problems of inflation and the devices by which central government spending can be curbed are of immediate relevance to the experiences of this country.

This leaves three further sections to the proceedings: (a) measuring the efficiency and effectiveness of government activities (pages 43–92); (b) public reporting by governmental units (pages 1–41); and (c) audit and control of government operations (pages 93–117). This suggested sequence of reading is particularly instructive for accountants. The first of these topics will be novel ground for most accountants. However, it provides an essential perspective of how useful non-financial indicators are in providing information on government activities. The main paper, by economists Davis and Larkey, has a style which appears casual, even flippant at times. Much of this impression is created by the apocryphal tale told at the beginning of this paper, which introduces a barrage of problems and makes the reader think the authors have not adequately defined their discussion topic and are in danger of losing sight of it altogether. However, in the remaining parts of this paper, the issue of measuring efficiency and effectiveness is taken up in a careful, analytical manner. The tightly argued conclusions of the authors will provide reassurance to accountants: non-financial indicators are no panacea for the reporting problems of municipalities.

However, this reassurance might be replaced by disquiet after reading the Anthony-Burton contributions on government reporting which question both its form and its substance! In the section on auditing, the principal paper, by Pomerantz, highlights the difficulties of government audit. The nature of the audit function in the public sector and the need for performance auditing are thoughtfully set out. The Davis-Larkey analysis of the measurement of efficiency combines with the Pomerantz paper to give an impression of the formidable challenges facing the auditor in the public sector. Who is a match for this task? Given the professional origins of the discussants, it is somewhat surprising that a livelier response was not made to this question.

In conclusion, this is a most useful book. It contains original material and the commentaries on these contributions are short and sharp. It is a book which should be of interest to practitioners, researchers, teachers and students.

University of Edinburgh Irvine Lapsley

Tax Systems of Western Europe. *C. J. Platt.* Gower Press, 1980. xxi + 166 pp. £15.00.

This book by the former editor of the annual *Survey of Published Accounts* provides tax information on twenty three countries and islands in Western Europe (including Romania but not Yugoslavia!). The book is arranged by country and provides brief information (about 6 pages each country) on income tax, corporation tax and other taxes important to particular countries.

For a company starting up in a foreign country this sketchy information would hardly be sufficient. It would be necessary to turn to more detailed works (like the tax surveys of the professional firms, which are listed as references) and no doubt to consult experts. For an academic or comparative purpose, information combined by topic rather than by country would be more useful, as in the ICAEW publication reviewed in this journal in Spring 1980, p. 266.

However, to the extent that other sources are difficult to obtain or out-of-date, this volume may be useful to some readers. Certainly, a few of the countries covered here are sufficiently out-of-the-way not to be discussed in other sources. As to this book's currency, however, it too will need yearly editions to remain useful.

A few detailed points worry me. There are no references to the treatment of the losses of corporations (this is very important for new companies). Secondly, the 'note form' approach makes it difficult to detect underlying systems or the implications of facts. For example, the dividend tax credit in Italy is said to be 1/3. Many sections later, the corporation tax rate is said to be 25%. There is no note made of the fact that this implies full imputation of the corporation tax to the shareholders. For Germany a note of this sort is given, but the reader would not gain an impression of the great importance of local taxes in the final tax burden.

University of Exeter C. W. Nobes

The Audit Evidence Process. *David J. Hatherly.* Anderson Keenan Publishing, London, 1980. vii + 152 pp. £7.95 hardback, £3.95 paperback.

The author of this book should be commended for his effort to take a novel approach to the discussion of the auditor's evidence evaluation process. Most auditing instructors realise that covering the process of audit evidence evaluation and aggregation in classrooms is essential but difficult without the aid of supplemental reading materials. Assigning outside readings is cumbersome and the integration of various pieces from multiple sources requires time, and quite often, luck. To those instructors who have had this experience, this book would give some comfort.

This book consists of seven chapters. In Chapter 1, an introduction to auditing and audit evidence is made. Then a framework for auditing standards, the auditor's operational standard, and detail and limited audit objectives are discussed. Chapter 2 contains principal types of audit evidence, the quality of evidence, the balance and consistency in evidence from different sources, and the independence and inconsistent evidence. These are discussed as the basic principles of evidence evaluation.

The principles of selection and evaluation of evidence are applied in Chapter 3 to discuss the order in which audit evidence should be collected and evaluated. The steps include stating detailed audit objectives, acquiring knowledge of the business, obtaining key statistical information about the accounting populations, understanding interrelationships among related accounts, performing analytical review, evaluating internal control, testing compliance, conducting substantive tests, and reviewing overall presentation of figures.

Chapter 4 identifies and discusses nine different types of operation which typically exist in a routine accounting system. Then the different types of internal control are related to detailed audit objectives and compliance tests. Finally, a reconciliation of these with the British Auditing Standards and Guidelines is made. Chapter 5 introduces a general approach to the design of substantive tests. It includes a discussion of statistical sampling and substantive testing, the sample selection, and assesing the quality of evidence.

Chapter 6 contains specific illustration of the application of the approach introduced in Chapter 5. The author discusses substantive tests appropriate to the audit of sales and to the audit of debtors. The quality of evidence is again emphasised. The discussion of sales proceeds on an objective-by-objective basis. All the previously introduced concepts and procedures are actually employed in the discussion of the practical aspects of audit.

Chapter 7, entitled Planning, Controlling and Recording, contains a discussion of audit planning, factors determining the selection of the approach to be taken in the audit, planning and control features throughout the audit process, the role of working papers, and the review of these functions.

The author has done a truly fine job in illustrating various steps in evidence evaluation process through the use of diagrams, charts, and other figures. Students and auditors could benefit from the concise presentation of the concepts and procedures. Starting from the discussion of evidence evaluation concepts and procedures, the author proceeds directly to the application of these introduced ideas.

This book has taken a very practical approach to the evidence evaluation process. The 'unconventional' vehicle intended by the author for the presentation of conventional ideas is not very 'unconventional.' One thing I miss in this book is that risk and assurance levels introduced in earlier parts of the book are not completely integrated in the overall review part. What is the process which the auditor uses in aggregating risk and assurance levels for individual propositions while considering various interconnected propositions? How does the auditor come up with the overall level of risk and assurance he intended at the audit planning stage for use in deciding on the final audit opinion? The author does not do much to narrow the gap in the auditing literature which he perceived.

This, however, cannot be regarded as a weakness of this book. Auditing instructors would agree that there has been virtually no auditing book which tried this. My hope, when I received this book from the editor, was that this task would be performed here as the aggressive title of the book was so impressive.

Overall, this book more than accomplishes its intended objectives and serves as a useful supplemental reading material for most auditing courses.

State University of New York at Buffalo — John Y. Lee

Taxation of Companies. *Richard Bramwell and John Dick.* Sweet and Maxwell, 2nd ed., 1979. xxii + 236 pp. £17.

Taxation of Companies is the second edition of a work originally published in 1973 to mark the introduction of the imputation system of corporation tax. Although published as an individual work it is also part of the *British Tax Encyclopaedia.* As such it is essentially a reference work for the practitioner; it is not suitable as general introduction to the scheme of corporation tax, nor does it provide a commentary on the policy issues raised by the tax.

Since company taxation has not received that much attention from either the courts or the legislature since the first edition, the authors have devoted most of their effort to re-examining existing material from the previous edition and to considering in depth particular problems which have been found to arise in practice. The law is stated as at March 31st, 1979 (but with references to the Capital Gains Tax 1979), although references to the Interpretation Act 1889 (pp. 84, 173) should have been amended to references to the Interpretation Act 1978, which came into force on 1st January, 1979. Consideration of the building societies' tax rate should also have been updated with a reference to the reduced as well as the basic rate of tax.

The ordering of the material, given the practical emphasis of the work, is perhaps questionable. The first chapter deals with the definitions of subsidiaries on the ground that references to groups appear throughout subsequent chapters. Thus discussion of group problems is found in the chapters on capital gains, losses, distributions and imputation, and franked investment income. Similarly, reconstructions and amalgamations are considered under capital gains and also in the chapter on reconstructions without change of ownership; while company partnerships appear in the chapter on stock relief as well as in the chapter devoted to them. A more useful approach might have been to provide an exposition of the corporation tax as applying to the individual company, and then to identify particular problem areas—groups, reconstructions and partnerships for example—covering all the relevant tax aspects under each head. In this way the reader is not assumed to know already the issues which arise in each problem area: rather he would be provided with a reminder of related topics which he might not otherwise have considered.

As well as the chapters already noted the work also includes three on close companies and one on each of the charge to corporation tax and the computation of profits, double tax relief, non-resident companies, administration and special types of companies and other bodies. This last chapter includes consideration of investment companies, unit trusts, life assurance companies, housing bodies, building societies, mutual businesses, nationalised industries, trade associations, local authorities and charities—a mine of information. Admittedly the book is on company and not personal taxation, but perhaps some consideration could properly have been given to the workings of s.460 of the Taxes Acts.

An excellent feature of the work is the coverage given to such practical points as the time limits for claims and to statements of revenue practice in areas where the interpretation of legislation is open to doubt. On the other hand the quality of exposition is variable. For example, the chapter on the definition of subsidiaries is probably more difficult to follow than the statute itself, whereas the exposition of the implication of close company apportionments for surplus advance corporation tax is clarity itself. Some of the difficulties in the text arise from the exhaustive use of footnotes: the reader wishing to know, for example, whether charges should be deducted from income or chargeable gains for the purpose of the small company rate will seek in vain unless he spots the relevant footnote.

The information in this work is indeed encyclopaedic but in the final analysis a work of this type can only be judged by whether it is equal to the occasion when reference is in fact made. This reviewer had occasion to study the legislation with regard to the 'Setting of company's surplus advanced corporation tax against subsidiary's liability' (FA 1972 s. 92). In spite of its title the section does not require that there be surplus ACT; any ACT can be surrendered and this would be beneficial in cash flow terms when the parent company has a preserved payment date but the subsidiary is a new company paying tax nine months after the end of its accounting period. Yet not only is there no mention at all of this in *Taxation of Companies* but it is implied (p. 98) that a condition of surrender is that there be surplus ACT. Then (p. 99) it is stated that any claim for surrender must be made within 2 years of the relevant accounting period, whereas in fact the limit has always been (by virtue of FA 1973) 6 years. Finally it is said that the subsidiary must be a 51 per cent subsidiary as defined in chapter 1; but the additional test with regard to rights to distributable profits and to assets on a liquidation is not even noted. Small inaccuracies in a work of this complexity are probably inevitable, but the level of error and omission in respect of just one section is worrying.

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Related Party Transactions. *A. K. Mason.* Canadian Institute of Chartered Accountants, 1980. 296 pp. Can. $19.50.

Dr Mason of Deloitte Haskins and Sells, backed by an Advisory Group of four practitioners, was provided with the following terms of reference for undertaking the study which has led to this work: (1) To define and discuss 'related parties', dealing particularly with criteria for determining the existence of related parties and the types of transactions they make. (2) To discuss how such transactions should be accounted for and disclosed. (3) To discuss the creditor's responsibilities and (4) To propose changes required in present practices. The Research Department of the Canadian Institute of Chartered Accountants concluded that this book represents a significant contribution to accounting and auditing literature.

Dr Mason sets out the results of his study in the form of 13 chapters covering broadly the sequence and content required in his terms of reference. However, these 13 chapters only contribute about half of the book, with the remainder consisting of appendices containing accounting standards and pronouncements of professional bodies, a brief review of studies of transfer pricing practices in Canada and the US and an audit programme for related party transactions.

The book has been very systematically constructed. It resists the temptation to plunge into the accounting aspects of the problem too quickly and takes time establishing why there is a need for separate concern about related party transactions. The justification offered rests extensively upon a series of prominent legal cases in the USA, Canada and the UK. *Accounting and Business Research* readers will be interested to see details of Pergamon, The Lawson Group, London and County, Lonrho, and London Capital Group. While each case cannot be considered comprehensively in such a book as this, this chapter alone could be of considerable interest to financial accounting students in that it provides them with an annotated list of important and influential cases. After this justification for the study, Mason carefully develops definitions of related party transactions.

Chapters 4 to 6 concentrate on current practices in regard to both measurement and disclosure of related party transactions although transfer pricing gets a whole chapter to itself. The description of current practices consists primarily of references to professional pronouncements and the chapter on transfer pricing offers nothing more than expected in an undergraduate text. Descriptions of practices are therefore essentially based on reading professional guidelines and empirical studies performed by others rather than direct observation of the author himself and there is little new in the way of critical analysis or a new attempt to understand why practice is as it is.

Chapters 7 to 10 develop suggested standards for both measurement and disclosure together with a brief (4½ pages) examination of records that would need to be maintained to serve these standards. The arguments are plausible enough but by no means non-contestable. Finally, chapters 11 to 13 offer suggestions for audit practice. This includes sensible check-lists for discovering when special attention ought to be paid to identify related party transactions and how to deal with them when they are known to exist.

As a whole the book tends to disappoint. After so carefully setting out the justification for the study and definitions of relative party transactions, there was a need to have a more extended discussion than 162 pages to deal with the problem comprehensively. However, the book is significant in trying to bring discussion of various types of transactions of this nature together. It will also be of much interest to students in providing comparative material for the USA, Canada and UK on legal cases and professional body pronouncements. It should certainly be read by practising accountants and academics but the main value of the book will probably be in creating a basis for debate in this important area.

University of Bath C. R. Tomkins

The Management of Business Finance. *John Freear*. Pitman, 1980. xiv + 522 pp. £9.95.

The author of this introductory text states clearly in the preface that his primary intention was '... to examine financial decisions in a way which emphasises the relationship between theoretical and institutional material, with particular reference to the United Kingdom'.

This admirable aim is to some extent achieved: in particular there is extensive coverage of the issues and evidence considered by the Wilson Committee, up to and including the publication of the Interim Report in March 1979, but more generally the book is disappointing since the descriptive UK material is rarely related to any theoretical analysis. There is, for example, not a single reference to a specific UK company throughout the entire discussion in chapter 6 on the costs of long term debt, equity, preference shares, convertible and warrants whilst the additional reading suggested at the end of the chapter refers only to US texts.

The subordination of UK material is again apparent in chapter 10 with the discussion of efficient markets in which references to UK research omit mention of Brearley, Dryden, Kemp and Reid and of the review article by Henfrey *et al.* There is no reference to any UK research on the strong form of the efficient market hypothesis, and even in the rather more satisfactory chapter 17 on mergers, the important paper of Franks, Broyles and Hecht is not included. The innovative institutional discussion introduced by the author consists mainly of chapters on the influence of the government, international comparisons and two chapters on small firms which draw heavily on material from the Bolton and Wilson Committees.

The coverage of the standard business finance material is adequate if seen in the context of an introductory course book but there is little effective guidance on how further analysis may clarify the issues discussed. The section on leasing, for example, amounts to less than three pages, almost entirely restricted to description and indicative statistical information. The brief discussion would not appear helpful to the finance manager (whose point of view is apparently adopted by the author) and would certainly not convey to student readers any of the considerable academic debate on the appropriate analysis of leasing.

In the more theoretical aspects there is some confusion in the treatment of portfolio risk since the discussion switches rapidly from nominal to real returns with little regard to the serious implications of the transformation. There is a lengthy illustration of the effects of price level changes on net present values in chapter 5 but thereafter inflation appears mostly as a subject for passing comment such as in the discussion of an investor's extreme aversion to risk:

> Figure 10.4.3(b) demonstrates Fred's obsession with risk; he would select his portfolio entirely in terms of risk minimization, and would probably invest in government stocks (although this strategy will not avoid inflation risks) or indexed national savings certificates.

The impression gained from reading the book is that its conception was simply over-ambitious and this inference is supported by the lack of clarity of exposition. In some instances, comprehension is hampered by clumsy typography as on pages 70 and 71 in the discussion of two projects A and B:

> Another way of expressing these differences is to [here appears Figure 4.2.2.] use a measure of dispersion such as standard deviation or variance, which is the square of the standard deviation. For A, the calculations are shown in Table 4.2.3 [here appears Table 4.2.2.; Table 4.2.3. is printed overleaf]. The variance of A is thus £305,400; the square root of the variance, which is the standard deviation, is £552.63. This measures the degree of dispersion around the expected value.

In general although the book contains a considerable amount of institutional information and might be of some use to non-specialist students wishing to acquire some basic knowledge of business finance in the UK, it cannot be recommended as a general introductory text or to a professional readership. Although additional reading is suggested, the basis of the selection is not clear and consists of alternative treatments of the same material (as in references to Bromwich and Carsberg), official reports discussed in the text (Bolton, Wilson) and, less frequently, more advanced discussion of issues only briefly covered as, for example, on business failure, where reference is made to Altman and Beaver.

It would seem advantageous in this type of introductory text to indicate the importance and limitations of the discussion and one way in which this could be achieved is by including questions and associated problems at the end of chapters. Despite the statements in the preface, the aims of the book are not always obvious and require clarification if a revised edition is seriously contemplated.

University of Lancaster Charles Ward

Understanding Company Accounts. *Peter Bird.* Pitman, 1979. vii + 111 pp. £1.95.

As a man who prefers Gower to Boycott, and Mozart to Mahler, I've always admired that facet of the artist which allows him to say his piece quickly and then leave the stage—provided that he says it well. So with accounting writers! Peter Bird has written a very short book (94 pages excluding appendices), which is the essence of clean, short-winded prose. He has always been a delightful writer—his essays on accounting standards in the books of readings by Edey and Yamey, and Carsberg and Hope are models of clarity—and his latest work entitled *Understanding Company Accounts* is no exception.

His book is aimed at 'a person with no previous technical knowledge of accounting'; it intends that the reader should, after studying its contents, 'be able to pick up a set of published accounts and get out of them a high proportion of the information that it is possible to derive from them'; and finally should 'be able to avoid reading into the accounts items of information which are not in fact there, though they may appear to the untutored eye to be there'.

These are ambitious targets. Whether they can be achieved in 94 pages is highly debatable. Certainly few other writers, Parker excepted, have attempted an understanding of financial statements in quite so few words. But Professor Bird certainly has a good try. With the aid of the 1977 accounts of Martonair International Ltd. (which take up 14 pages of the appendix), he takes us, in four main chapters, through what he sees to be the bare essentials of an appreciation of financial statements—a knowledge of the historic cost basis of accounting, which encompasses both the technical framework of accounting and the pricing of assets and liabilities (chapter 2), some ideas as to how companies might incorporate price changes, general and specific, into their accounts (chapter 3), a working knowledge of the pros and cons of conventional solvency, profitability and financial structure ratios (chapter 4), and most interesting of all, an idea of the recommendations of the *Corporate Report* (chapter 5). The content of chapter 5 may help to explain the choice of Martonair Ltd., as the 'real-world' application of the theory, as this company produced a Value Added Statement as part of its 1977 accounts. All of the above is conducted in the context set by chapter 1, in which accounts are viewed as coded messages to be decoded, and as models to be understood as condensed versions of the real thing.

So does Professor Bird meet his targets? Well, aside from the virtue of brevity, I think the structure is innovative for such a book, and the innovation pays off; the chapters hang well together and the messages come across clearly. But I have a doubt or two, which probably reflects my own biases. Quite a few years of trying to convince hundreds of first year students of the joys of financial accounting have persuaded me that their biggest single problem in understanding accounts lies in an appreciation of the relationship between profit and cash. All else is (comparatively) insignificant. 'Why is it that the year's profit isn't the same as the increase in cash?' is the most frequently-heard cry from the youth of Manchester. And it matters as much if the profit is a current cost as an historic cost one. Professor Bird does indeed devote some space to this problem on pp. 13 to 15, and he expresses his thoughts well. I only wish he had said more. Perhaps a more detailed example—with or without the accounts of Martonair—would have aided his readers' understanding. I would have liked a whole chapter on the subject.

I have some minor quibbles. The excellent chapter on inflation accounting, written before the advent of SSAP 16, is already incomplete without reference to a MWCA. The capital maintenance section is too short; and it may be a little off-putting for students to refer continually to the appendix for an understanding of the main text. I hope that readers will not end up with a thorough knowledge of Martonair's accounts and little else!

But these are very minor quibbles in a splendid piece of writing. My main concern is with the book's potential readership. The book's cover suggests that 'students of accounting at technical colleges, polytechnics and universities, post-experience students and the non-specialist reader alike will find this book an invaluable guide to its subject'! I wonder if they will get the chance to find out. In times of economic stringency will their lecturers suggest the purchase of a text which will likely cover only part of a course, rather than a more detailed text which covers a whole course even though the chapters it devotes to Professor Bird's material are likely to be that much less enthralling?

University of Manchester Tony Hope

Accounting Models. *M. J. Mepham.* Polytech Publishers, 1980. 624 pp. £8.80.

This book is unusual in that it is a textbook which concentrates on the issues which are typically presented in one of many standard mangement accounting text-books, but from a more explicitly mathematical perspective. This is achieved by using algebraic and geometric models, including three-dimensional models. The author sets out to describe management accounting concepts and techniques through linear models.

The book commences with two chapters on model creation and classification and then in subsequent chapters presents break-even analysis, multi-product costing, process costing, budgeting, costs for decisions, capital investment analysis etc., using matrices, linear programming and other deterministic models. All this takes 624 pages but becomes very detailed and too abstract at times, and thus loses the vitality which a management accounting text requires.

The book is certainly novel, but does it achieve its primary objective of making 'explicit the models which at present are implictly used and then builds on this base'? I'm afraid that it does so only in a fairly limited sense. First, 'the book concentrates on linear models'. This may keep the mathematics well contained, but it limits the reality and potential of the work. A base assumption of linearity is fine, but it must not restrain model development; in fact the author has to break through the linearity assumption, for example with discounted cash flows. The book contains over one hundred pages on the use of linear pro- development; in fact the author has to break gramming in accounting, but does no more in principle than Richard Mattessich[1] did 14 years ago.

The second reason I feel that the book misses its objective is in the extent to which the analytical and experimental aspects of modelling can be used in management accounting. The omission of probabalistic models and the fleeting attention to sensitivity analysis limit the book's potential in this area, and the result is rather unrealistic.

As a teacher the book presents problems as it would require a less traditional approach to the subject. Perhaps this is a good point in itself, but it would need major supplementation with a book covering the benefits and problems of using the models discussed in Mepham's book in order to enable the student to see the potential of model building to aid decision-making. If such a supplementary book can be obtained then this book may have a substantial role to play in undergraduate teaching, but on its own it is an interesting and useful reference book on the basics of management accounting models.

Loughborough University J. A. Piper

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[1] R. Mattessich (1964), *Accounting and Analytical Methods*, Homewood, Ill. Richard D. Irwin.

Free to Choose. *Milton and Rose Friedman.* Martin Secker and Warburg, 1980. xii + 338 pp. £7.95 (cloth), £4.95 (paper).

Many readers will be familiar with Professor Friedman's recent television series *Free to Choose.* But, as Milton Friedman says of television in the preface of the book of the film, 'anyone who is persuaded in one evening (or even ten one-hour evenings) is not really persuaded. He can be converted by the next person of opposite views with whom he spends an evening.' Unfortunately the television series gave us repetitive images of extremes. The market mechanism was always St. George; the government was always the dragon.

Reading Professor Friedman's book, the lingering images are distinctly different. Friedman is a mainstream economist par excellence. He is at pains to point the failures of the market mechanism (the prisoner's dilemma; externalities); he indicates that some aspects of resource allocation are undoubtedly best achieved by the visible hand of government. But he also warns that whilst the market may fail in allocating resources optimally, so may the government. Milton Friedman argues, utterly convincingly, that the burden of justification is firmly in the court of the interventionist.

Friedman's erudite challenge of controls of all sorts (whether they are about prices and wages or rents), his demolition of arguments for import controls and the summary of his work on the link between money and prices are all well worth reading.

Compared with a television programme, as Friedman points out, the 'book can explore issues deeply—without being limited by a ticking clock. The reader can stop and think, turn the pages back without being diverted by the emotional appeal of the scenes moving relentlessly across his television screen.' This book is so much better than the television programme; it has a real message and it is cogently argued unlike the television version which was excessively long on assertion.

In short, *Free to Choose* is thoroughly recommended.

London Adrian Buckley

Foreign Exchange Management. *T. W. McRae and D. P. Walker.* Prentice Hall, 1980. xvi + 288 pp. £15.95; **Foreign Exchange Management in US Multinationals.** *R. M. Rodriguez.* Lexington Books, 1980. xii + 128 pp. £11.50.

Foreign Exchange Management is by two authors well known in this field. It is 'intended as a practical guide to foreign exchange exposure management. It is not an academic treatise...' (p. xv). The book is well written and thorough. There is a good introductory apologia for the importance of the subject matter; followed by Part I on economic and institutional background; Part II on the definition, measurement, strategy and tactics of exposure; and Part III on rate forecasting, taxation and exchange control.

One problem in this area is rapid change. The removal of UK exchange controls in 1979 is included, and the demise of FAS 8 is included in notes. However, the prevalence of references to FAS 8 and its effects make the book somewhat 'historical' already. It would have been sensible in such a book to ensure that the dates of all tables and of the outlines of institutional arrangements were clearly documented. This is lacking in some places (e.g. Tables 2.1 and 4.2).

There are many useful explanations of institutional matters, like the forward exchange market; techniques, like hedging; and theories, like that on purchasing power parity. However, as the title of the book suggests, there is no substantial coverage of the financial accounting arguments about which method of currency translation is 'correct'.

As a practical book, *Foreign Exchange Management* is to be much recommended as an interesting compendium of many of the important facts, techniques and theories which need to be mastered by foreign exchange managers. For some academics in related subjects and for specialised students it should be a useful work of reference.

The second book, by Rita Rodriguez, is also not a text book, but the report of a major survey of the behaviour of foreign exchange managers in US multinationals. A 1974 survey on factors relevant to exchange management was conducted in 70 such companies, and a 1977 survey, particularly concerned with FAS 8, in 40 of them.

Many interesting findings are disclosed. For example, that over 50% of managers considered for internal purposes that inventories were exposed and that FAS 8 had no effect on decisions (p. 13). Also, the number of companies with internal reporting systems which considered whether future profits were exposed to exchange risk was only 2% in 1974 and 8% in 1977 (p. 15).

There is a discussion of who makes the exposure management decisions, with the conclusion that many companies do not have sufficiently good internal communications for the exchange managers to be aware of the exchange implications of the actions of operating managers, and vice versa (ch. 2 and p. 101). There is a strong finding that managers see their jobs as defensive and non-speculative. Further, that they are risk-asymmetrical, and are willing to pay a higher hedging cost than the expected average exchange depreciation (ch. 4 or p. 105).

The last major section comprises a consideration of whether multinationals are a destabilising influence on currency markets. The conclusion seems to be that they might well be, not deliberately but because of their strong aversion to exchange losses.

All these facts and conclusions are interesting, but I am left with a concern about their accuracy. Dr. Rodriguez tells us that 'the questionnaires were not administered systematically. The interviews were based on a free-flowing discussion... and the questionnaires were often filled in afterwards...' Even if this did not allow biases to creep in, the veracity of exchange managers of multinationals must surely be open to question. This area is highly political because of its association with exchange crises, transfer pricing, capital flows to and from developing countries, and so on. The possibility of biases and errors in the replies of the selected managers is not seriously discussed. Fortunately, there have been many other studies in this area, particularly on the impact of FAS 8 (including the FASB's own research report of December 1978). Dr. Rodriguez' study can be added to this mass of data.

University of Exeter C. W. Nobes

Notable Contributions to the Periodical International Accounting Literature—1975–78. *Selected by the International Accounting Section of the American Accounting Association*, AAA, 1979. vii + 168 pp. $8 (members, $6).

This is the first major publication by the International Section of the American Accounting Association. Fifteen articles published during the four years from 1975 to 1978 have been reprinted in a collection which has the rather vague objective of honouring recent and—in the view of the nominating committee—notable contributions to that area of accounting literature which has acquired the description, International Accounting. But this book of readings does serve two other purposes: firstly, it introduces the reader to some of the topics which might be included in the study of International Accounting and secondly, it provides, in its organisation, a framework which goes some way towards defining the area of study.

International Accounting is perhaps a misleading title. In its narrowest sense, *International* applies only to relations *between* nations but here it includes any aspect of accounting which extends beyond one particular social context. Furthermore, *International* Accounting alludes to the role of the nation state as the basic unit of study even though a number of writers have underlined the relevance of other groupings in the 'world-system': for example, Choi has examined the relationship between corporate financial disclosure and the 'supranational' capital market, Enthoven has focused on the distinction between accounting systems of the developed and developing world—a boundary which cuts across countries—and Stamp has assessed the impact of accounting harmonisation in a common market.

Unfortunately, the three works mentioned above were published in 1973 and therefore do not gain a place in this book of articles. This is the main drawback of such a collection: it gives a false impression of the 'state of the art' in International Accounting. The compilers were constrained to choose only 15 articles (i) which were published in a certain 4-year period, (ii) from a larger number of works considered to be 'outstanding', and (iii) without attempting 'to specifically select articles to fit those areas' chosen to subdivide the overall topic, viz. Accounting Issues of Multinational Enterprises (Part 1 of the collection), Descriptive and Comparative Accounting (Part 2) and International Accounting Standards (Part 3).

Descriptive and Comparative Accounting seem, to me, to provide the basis for the study of International Accounting. Descriptive Accounting refers here to those works on accounting in social contexts which differ from the immediate environment of the intended reader and which do not offer an explicit comparison. This is exemplified by Al Hashim's 'Social Accounting in Egypt', a short paper which portrays the Egyptian uniform accounting system and then, through illustration, reveals how the financial statements of Egyptian companies are designed to provide the basic data for national economic accounting. The compilers of this collection should be congratulated for introducing Part 2 with an article which focuses on a specific issue in what is, to most readers, an alien context and which allows the interested reader to carry out his or her own comparative analysis without great difficulty. Two other non-comparative contributions are included: Jusodirdjo's description of the accounting profession in Indonesia and Spinosa Cattela's case study of replacement value accounting in the Dutch company, Philips.

In contrast, Comparative Accounting abstracts from specific social context in order either to construct universal accounting theories or to illustrate how accounting statements of a theoretical nature might be, in essence, culture-bound. An introduction to comparative analysis is provided by Jaggi's attempt to identify certain features, present in each system, whose variation can be associated with differences in accounting practice. Unfortunately Jaggi's hypothesis (that the variables 'capital market development' and 'cultural environment' influence the generation of reliable financial information) remains untested. But, by drawing on the work of the comparative sociologist Talcott Parsons to classify societies in terms of 'universalism' or 'particularism', Jaggi provides the only example in this collection of that fundamental problem in comparative analysis: scaling abstract variables.

The three remaining papers in this section are explicitly comparative and each in its own way is a good example of different aspects of the comparative method. Barrett's paper, in which he tries to justify empirically a relationship between equity market efficiency and the extent of corporate disclosure in seven countries, contains a useful illustration of the problem of 'measurement equivalence'. In effect, Barrett's disclosure indices act as indicators of a more abstract variable (the efficient dissemination of information germane to investment decisions) but, as information which is disclosed by implication in uniform systems is not fully incorporated in the indices, they cannot act as equivalent indicators when the extent of standardisation or uniformity varies. This paper also illustrates how generalised, universal theories are constructed by associating inconsistent results with unique features of the aberrant system; in this particular case, the process remains unfinished when an 'unidentified variable' is introduced to explain inconsistencies in the British data. Finally, Barrett's paper hints at the problem of 'linguistic equivalence', providing some justification in this case for an English language orientation.

Some problems of equivalence can be overcome by comparing dissimilar features of systems which are similar in many other ways, thus holding constant a number of potential influences on the phenomenon studied. This approach is demonstrated in the second comparative study, where Benston's hypothesis (that agencies regulating corporate disclosure will be most effective when they seek to maximise their own welfare) is developed by contrasting just two cases, the SEC with the London Stock Exchange. Although Benston's sample is limited, he is able to focus in both cases on conceptually-equivalent features: the scope, costs and benefits of regulation. The problem of 'conceptual equivalence' is more readily illustrated by Parker, who not only shows how the concept of consolidation differs in a number of European countries but also distinguishes a set of basic concepts whose 'equivalence' (that is, their potential application, in varying combinations, in each society studied) allows Parker to explain some of the differences we can observe in European group accounting. Parker's comparative method also emphasises the need to associate variation in accounting behaviour with differences in the characteristics of each system: what he calls 'underlying reality'.

The rather detailed analysis presented above shows how the readings selected for this collection illustrate, although not explicitly, some fundamental aspects of comparative analysis in accounting. However, the emphasis on 'corporate financial disclosure' does not properly reflect the diversity of 'notable' publications in this area during the period. For example, one might have expected the analytical studies of incentive indicators in the accounting systems of centrally-planned economies by Weitzman (1976) or Loeb and Magat (1978) to have achieved recognition.

The articles reprinted in Part 3 provide a historical note on the emergence of International Accounting Standards. Benson's semi-autobiographical account of IASC can also be viewed as a first-hand and subtle commentary on the process of accounting policy-making. Two other papers, one by Cummings and Chetkovich and another from Lanz and Rogers, also describe institutional influences on the international harmonisation of accounting measurement and corporate disclosure. Due to its very nature, this material already appears outdated but it does provide an introduction to the study of *International* Accounting. The three articles focus on cooperative efforts between nations and perhaps the compilers might have included here a paper from Part 1, Mueller and Walker on Transnational Financial Reporting. In spite of its title and introduction, this article concentrates mainly on the problem, confronting individual firms, of reporting between nations.

With the exception of the article by Mueller and Walker and a useful paper by Choi outlining the wide variety of accounting problems inherent in multinational enterprise, Part 1 (Accounting Issues of Multinational Enterprises) focuses on one topic: the problem of accounting in one currency for transactions and operations which take place in a multicurrency world. The implications of incorporating spot and forward rates of exchange into the budgeting process are examined in a paper by Lessard and Lorange on the measurement and control of divisional performance in a multinational corporation. But the two remaining papers are not concerned with issues that are strictly multinational: Aliber and Stickney discuss the economic exposure of the firm to future exchange rate movements (which equally affects companies with a single-currency portfolio of assets and liabilities) and Shank provides a critique of the translation methodology proposed in FASB 8 (which is equally applicable to firms which merely export or borrow in an external currency). Both of these articles might be considered as forerunners of continuing discussions in both the finance and accounting literature but, as they both assume a historical cost basis for accounting measurement, it is unfortunate that no exposition of the restate-translate controversy, such as Choi (1975 or 1977), was deemed worthy of inclusion in this collection.

The preface of this book gives the impression that an audience of researchers and students was in the minds of the compilers. Certainly an 'overview' would have assisted both groups by indicating why the articles were considered to be 'outstanding' and how research methodology in International Accounting is illustrated by the selection of readings. It is also odd that little information is provided about the source of each article reprinted; only the author(s) and article title are given in every case but, for some, not even the name of the journal originally publishing the work is revealed. But in spite of the shortcomings of this collection, resulting mainly from the basis of selection, this book does bring together a number of readings which provide a useful, although not comprehensive, introduction to International Accounting.

University of Lancaster Stuart McLeay

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Quantitative Aids for Management Decision Making. *C. F. Palmer.* Saxon House, 1979. viii + 202 pp. £8.50.

This is an introductory text designed for those with only a limited knowledge of quantitative methods. The format of each of the seven chapters is: (i) a brief outline of the technique under discussion with examples, followed by (ii) applications with suggested solutions. There are altogether sixteen applications.

Chapter one outlines four basic steps for decision making: define the problem; define the objectives; endeavour to develop alternative solutions; apply the decision once made. There are also brief references to some of the techniques illustrated in succeeding chapters. The second chapter looks at replacement decisions. These are firstly sub-divided into decisions related to gradual deterioration (solved by the average cost per annum) and those related to sudden failure (introducing probability). There then follows a discussion of the principles of discounted cash flow and basic accountancy methods. The discussion is all too brief and does not really provide the novice with any insight into these topics. The concept of risk in making investments is dismissed in two brief paragraphs and one short example.

Chapter three considers the use of decision trees as an alternative way of presenting the same information shown in a pay-off table. Again, discussion of the technique is brief but the example of an oil company with limited liquid assets usefully explains this application to the probability of different outcomes. The next chapter considers network planning and is perhaps the chapter best suited to this presentation. This is a technique for co-ordinating and controlling project work which is usually to be found in texts on operational research. It is a technique which could usefully be more widely applied to commercial and general management projects as well as to production problems.

Chapter six is devoted to linear programming. Both the graphical solution and simplex method are well presented as techniques. Chapter seven provides a brief insight into forecasting. Forecasting is sub-divided into synthetic forecasts and analytical forecasts and examples demonstrate the use of the least squares method as a line of best fit, weighted averages and exponential smoothing.

In summary, this text is useful as a source of worked examples. However, it leaves much to be desired as an elementary introduction to quantitative techniques. By the author's own admission, readers wishing to pursue the subject further should refer to the bibliography. The book is useful to tutors to supplement their teaching of the theory but could not be recommended to students unless used primarily as a work-book.

University of Exeter John J. Glynn

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